SITE: SATTON BROOK
BREAK: 11.09
OTHER: 18783

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#### Material Safety Data Sheet

Manufacturer's Name:

Plating Systems & Technologies, Inc.

317 North Mechanic Street Jackson, Michigan 49201

Telephone:

517-783-4776 (24 Hour)

Section 1 -Identification

Trade Name: PS&T Brand High Efficiency Promoter

Product Code: 411

Chemical Name and Synonyms: Mixture

Chemical Family: Mixture Formula: Proprietary

Section 2 - Hazardous Ingredients

Identity Percent TLV CAS Number 21651-19-4 < 30 Stannous Oxide  $2.0 \text{ mg/m}^3$ 

This product contains no components which are listed by IARC or OSHA as carcinogens and is not listed in NTP.

Section 3 - Supplier Notification under Section 313

This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

CAS Number

Chemical Name

Percent By Weight

(None)

Section 4 - Physical Data

Boiling Point: not applicable

Specific Gravity: 70-80#/ft3

Vapor Pressure (mm Hg): n/a Percent Volatile: 0
Vapor Density (Air = 1): n/a Evaporation Rate: n/a
Solubility In Water: approximately 70%

Appearance and Odor: dark grey product with sharp, somewhat sweet

chemical odor.

PS&T MSDS for PS&T Brand High Efficiency Promoter (Product Code No. 411)
Page 2 of 3
January 30, 1990

#### Section 5 - Fire and Explosion Hazard Data

Flash Point: not flammable Flammable Limits: Lel: n/a Uel: n/a

Extinguishing Media: not applicable

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Special Fire Fighting Procedures: not applicable

Unusual Fire and Explosion Hazards: none

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#### Section 6 - Health Hazard Data

Threshold Limit Value: (of Stannous Oxide): 2.0 mg/m<sup>3</sup>
Primary Routes of Exposure: Through skin

Effects of Overexposure: For skin: mild dermatitis; From inhalation: irritation; From ingestion: no reports of toxicity

Emergency First Aid Procedures: Eye/skin contact: flush or wash with water as required. For ingestion: induce vomiting; obtain medical attention.

#### Section 7 - Reactivity Data

Stability: (Stable or Unstable): Stable
Conditions to Avoid: Not Applicable
Incompatibility (Materials to Avoid): Not Applicable
Hazardous Decomposition Products: Not applicable
Hazardous Polymerization: Will not occur
Conditions to Avoid: Not applicable

#### Section 8 - Spill or Leak Procedures

Steps to be Taken in Case Material is Released or Spilled: Sweep up and discard.

Waste Disposal Method: Dispose of in accordance with all applicable federal, state, and local regulations (This product contains tin as Stannous Oxide).

PS&T MSDS for PS&T Brand High Efficiency Promoter (Product Code No. 411)
Page 3 of 3
January 30, 1990

Section 9 - Special Protection Information

Respiratory Protection: Approved Dust Respirator

Venitlation: Local Exhaust: Recommended Special: n/a

Mechanical (General): Recommended Other: n/a

Protective Gloves: Rubber or plastic gloves are recommended

Eye Protection: Safety glasses or chemical safety goggles

Other Protective Equipment: Not required

Section 10 - Special Precautions

Precautions to be Taken In Handling and Storing: Keep container closed when not in use. Other Precautions: None required.

Section 11 - Transportation Data

D.O.T.: Not hazardous Reportable Quantity: None

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Freight Classification: Chemicals, N. O. I.

Section 12 - NFPA Hazard Ratings

Reactivity: 0 Fire/Flammability: 0 Health/Toxicity: 2 4: Extreme; 3: High; 2: Moderate; 1: Slight; 0: Insignificant

Prepared by: Thomas H. Rochester Original Date: February 22, 1989

Reviewed and Revised: January 30, 1990

## MATERIAL SAFETY DATA SHEET

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Magni Indust	-		nċ			•	•	t t	343-7855	IE NU.
ADDRESS (Number,	Street	. City.	State and Z	p Code)					TURER'S D.U	N-S NO
2771 Hammond	. De	tro	it. MT	48209				09-541	-3050	:
AZARDOUS MATER Paint - Flam					NAME, HAZAF	ID CLASS.	HAZARD	ID NO. (49 CFR )	172.1011	· i
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n/a HEMICAL FAMILY						FORMU	11.4		· ·	<del></del>
Paint Coatin	. '			•		n/a		• • •		
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11113-70-5	T		Basic L	ead Silic	a Chromate				ACGIH (A	(2)
53-60-5	20	-30	Dibasic	Ester					n,	a
1330-20-7	T		Xvlo1						n	/a
13530-65-9	T		Zinc C	hromate	•				IARC (2)	)
108-65-6	10	-15	P.M. Ac	etate					n,	/a
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DIRECT THE COL					AND EXP	LOSIO	N HA	ZARD DA		
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Keep away fr					flames.		<u>:</u>			
										TRW-018

# Occupational Safety and Health Administration ATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SEC	TION I	
MANUFACTURER'S NAME Heatbath Corporation		EMERGENCY TELEPHONE NO. 413-543-3381
ADDRESS (Number, Street, City, State, and 21P Code) 107 Front Street, Indian Orchard, Mas	s. 01151	
CHEMICAL NAME AND SYNONYMS Case Hardening Salt		TRADE NAME AND SYNONYMS PenKay Case 4
CHEMICAL FAMILY	FORMULA	

SECTION	N II	HĄZAI	RDOUS INGREDIENTS		
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND METALLIC COATINGS	75	TLY (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					
C.A.S. HAZARDOUS MIXTURES	OF C	THER LIC	UIDS, SOLIDS, OR GASES	75	TLY (Units)
143-33-9			Sodium Cyanide	40	
16893-85-9			Sodium Silicofluoride	4	
7782-42-5			Graphite	1/2	
				1 2	

-		S	CTION JII	PHYSICAL DATA	
	BOILING POINT (F.)		N.A.*	SPECIFIC GRAVITY (H20=1)	2.2
Y.	VAPOR PRESSURE (mm Hg.)		11	PERCENT VOLATILE BY VOLUME (%)	None
ä	VAPOR DENSITY (AIR=1)		11	EVAPORATION RATE	None
ì	SOLUBILITY IN WATER	¥.	11		
į.	APPEARANCE AND ODGE	•	Gray p	owder. No odor.	

<b>₩</b> ₩(30.00 %)	<del></del>		
SECTION IV FIRE A	ND EXPLOSION HAZARD DATA		
FLASH POINT (Method used) None	FLAMMABLE LIMITS	Lei	Uel
EXTINGUISHING MEDIA			
SPECIAL FIRE FIGHTING PROCEDURES			
unusual fire and explosion mazaros Do not introduce nitrates, nitrites in	nto the molten salt.		

\*N.A. - Not applicable

PAGE (1)

(Continued on reverse side)

Form OSHA-20 Rev. April 72

STABLE X  INCOMPATABILITY (Materials to evoid) ACICIS, Water, steam.  ANALAGOOUS DECOMPOSITION PRODUCTS Hydrogen cyanide (Hethal gas).  MAY OCCUR  WILL NOT OCCUR  X  SECTION VII SPILL OR LEAR PROCEDURES  STEM TO BE TAKEN IN CASE MATERIAL IS RELEASED ON SPILLED SWEED UP. Dispose with other cyanide materials.  WASTI DISPOSAL METHOD Destroy Cyanide with oxidative method such as alkaline chlorination.  Neutralize to pH 8. 0 - 8. 5.  SECTION VIII SPECIAL PROTECTION INFORMATION  RESPIRATORY PROTECTION (Specify type)  VENTILATION  LOCAL ERMAUST  MECHANICAL (General)  X OTHER PROTECTIVE GAS  ASBESTOS  SECTION III SPECIAL PRECAUTIONS  Face shield, goggles  OTHER PROTECTIVE GAS  SECTION III SPECIAL PRECAUTIONS  FRECAUTIONS TO METASEN IN MANDELING AND STORING  STORE IN COOL, dry place away from acids and strong oxidants.  OTHER PRICAUTIONS  PAGE (2) Prepared: 9/18/84  Form OSM.	THRESHOLD LIMIT	VALUE	3.4		1	TH HAZARD DA		3961 C	***
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External - Wash well with water.  Eyes - Flood with water. See physician.  Internal - Follow cyanide procedure. Call physician immediately or rush vict to hospital.  SECTION VI REACTIVITY DATA  STABILITY UNSTABLE CONDITIONS TO AVOID  STABLE X X  INCOMPATABILITY (Materials is avoid) Acids. water. Steam.  MALARDOUS CONDUSTIONS MODULES  Hydrogen cyanide (lethal gas).  MALARDOUS FOLOMOSTION MODULES  SECTION VII SPILL OR LEAR PROCEDURES  STEPS TO BY TAKEN IN CASE MATERIAL IS RILLARDO ON SPILLID  SWEED UP. Dispose with other cyanide materials.  WASTE DISPOSAL METHOD  Destroy cyanide with oxidative method such as alkaline chlorination.  Neutralize to pH 8. 0 - 8. 5.  SECTION VIII SPECIAL PROTECTION INFORMATION  RESPIRATORY PROTECTION (Speech) 1999)  VENTILATION  LOCAL EMPAUF  MECHANICAL (General) X VIII SPECIAL PROTECTION INFORMATION  RESPIRATORY PROTECTION (Speech) 1999)  VENTILATION  SECTION IX SPECIAL PROTECTION Googles  OTHER PROTECTIVE EQUIPMENT  Asbestos Face shield, goggles  OTHER PROTECTIVE EQUIPMENT  ADDON  SECTION IX SPECIAL PRECAUTIONS  FRECAUTIONS  PROTECTION SPECIAL PROCEDURES  FORM OSM.  PROTECTION SPECIAL PROCEDURES  PROTECTION SPECIAL PROCEDURES  FORM OSM.  PROCEDURES  FORM OSM.  PROTECTION SPECIAL PROCEDURES  FORM OSM.  PROCEDURES  FORM	Cyanosis.	<del></del>			<del></del>			<del></del>	
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SECTION VIII SPECIAL PROTECTION INFORMATION  RESPIRATORY PROTECTION (Specify type)  VENTILATION  LOCAL EMPAUST  MECHANICAL (General)  Asbestos  Face shield, goggles  OTHER PROTECTIVE EQUIPMENT  Apron  SECTION IX SPECIAL PRECAUTIONS  PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store in cool, dry place away from acids and strong oxidants,  OTHER PRECAUTIONS  AGE (2) Prepared: 9/18/84  Form OSH.	Sweep up.	in in case materia Dispose wi	ith other	or sei	ide r	naterials.			
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SECTION VIII SPECIAL PROTECTION INFORMATION  RESPIRATORY PROTECTION (Specify type)  VENTILATION  LOGAL EXHAUST  MECHANICAL (General)  Asbestos  Face shield, goggles  OTHER PROTECTIVE EQUIPMENT  ADTOR  SECTION IX SPECIAL PRECAUTIONS  PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING  STOTE in cool, dry place away from acids and strong oxidants.  OTHER PRECAUTIONS  PAGE (2) Prepared: 9/18/84  Form OSH.	Destroy c	yanide with	oxidative	met	hod s	such as alkal	ine chiori	nation.	<del></del>
VENTILATION  LOCAL EMAUST  MECHANICAL (General)  Asbestos  OTHER PROTECTIVE GLOVE  Asbestos  OTHER PROTECTIVE ROUIPMENT  Apron  SECTION IX SPECIAL PRECAUTIONS  PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store in cool, dry place away from acids and strong oxidants.  OTHER PRECAUTIONS  PRECAUTIONS  OTHER PRECAUTIONS  PRECAUTIONS  Form OSH.	Neutraliza	to pH 8.0 -	8.5.			·			
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Asbestos Face shield, goggles OTHER PROTECTIVE EQUIPMENT  Apron  SECTION IX SPECIAL PRECAUTIONS  PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store in cool, dry place away from acids and strong oxidants.  OTHER PRECAUTIONS  PAGE (2) Prepared: 9/18/84  Form OSH		OTECTION (Specify 1)	rpe)						
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PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING Store in cool, dry place away from acids and strong oxidants.  OTHER PRECAUTIONS  PAGE (2) Prepared: 9/18/84  Form OSH.	VENTILATION PROTECTIVE QU	LOGAL EXHAL MECHANICAL	(General)  Asbes		X	EVE PROTECTION	SPECIAL OTHER	·	
Store in cool, dry place away from acids and strong oxidants.  OTHER PRECAUTIONS  PAGE (2) Prepared: 9/18/84  Form OSH	VENTILATION PROTECTIVE GL	LOGAL EXHAL MECHANICAL	(General)  Asbes		×	EVE PROTECTION	SPECIAL OTHER		
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By: Herbert Brumer Row. April 73	PROTECTIVE GLE OTHER PROTECT!  PRECAUTIONS TO STOTE IT. C.	LOGAL EXHAL MECHANICAL	(General)  Asbes Apron  SECTION  C.E. AWAY	ON IX	<b>SPE</b> (	EYE PROTECTION Face shield CIAL PRECAUTION S and strong	SPECIAL OTHER  I, goggles  ONS oxidants,		

TRW-01847

#### MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION DATA

FREDERICK BUTTH CHEMICAL COMPANY INC.

538 Forest Street, Kearny, NJ 07032

PEPTIZOID 143-NP

Emergency Telephone Numbers: 8:00 AM - 5:00 PM EST

Effective Date:

10-7-88

D.O.T. HAZARD CLASS - Corrosive Solid NOS

CHEMICAL FAMILY - Caustic cleaner

CHEMICAL NAME/SYNONYMS - TOTAL THE NE

FORMULA - Mixture

MSDS REVIEWED BY - Keith Frey, V.F. Quality & Regulatory Affairs

SECTION 2 - PHYSICAL DATA

\_\_\_\_\_\_\_\_\_

BOILING POINT (Deg F) - NA VAPOR PRESSURE (mm Hq) - NA VAPOR DENSITY (air=1) - NA

SOLUBILITY IN WATER - Complete to 32 oz/gal

SPECIFIC GRAVITY (H20=1) - NA VOLATILE BY VOLUME - NA EVAPORATION RATE (H20=1) - NA

APPEARANCE & ODOR:

white powder

SECTION 3 - FIRE AND EXPLOSION DATA 

FLASH POINT - None

EXTINGUISHING MEDIA:

This product is not combustible.

SPECIAL FIRE FIGHTING PROCEDURES:

Protective clothing and self-contained breathing apparatus should be worn by firefighters the eas where product is stored. Water spray, foam, dry chemical, or carb coxide may be used in areas where product is stored.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Will react with some metals; i.e. aluminum, tin and zinc, to release flammable hydrogen gas.

NFPA HAZARD CLASSIFICATION:

(Blúe) - 3

Flammability (Red)

Reactivity (Yellow) - 1

DEGREE OF HAZARD

4=Extreme 3=High 2=Moderate 1=Slight

Q=Insignficant

\_\_\_\_\_\_\_\_

Material Safety Data Sheet for PEPTIZOID 143-NP

#### SECTION 4 - REACTIVITY DATA

STABILITY: Stable

ONDITIONS TO AVOID: NA

#### INCOMPATIBILITY:

Strong acids, flammable liquids, certain metals, and organic halgenated compounds. Contact with nitro compounds may form shock sensitive salts.

#### HAZARDOUS DECOMPOSITION PRODUCTS:

None

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: NA

#### SECTION 5 - HAZARDOUS COMPONENTS

#### PAINTS, PRESERVATIVES, AND SOLVENTS:

NA

ALLOYS AND METALLIC COATINGS:

NΑ

HAZARDOUS COMPONENTS	CAS NUMBER	TLV	PEL	LD50	*
Sodium Hydroxide (Caustic S <b>oda</b> )	1310-73-2	C 2	2	240	15.2
Sodium Silicate	6834-92-0	C 2	2	600	10.0
rate Decahydrate	1303- <b>96-4</b>	5	NF	2660	11.3
sodium Dodecylbenzeze sulfonate	25155-30-0	NF	NF	650	1.77
Stoddard Solvent	64742-88-7	525	2950	NF	0.50

TLV = Mg/M3 - PEL = Mg/M3 - LD50 = oral, rat, Mg/Kg - NF = None Found

- # The indicated material, if any, is listed as a carginogen or potential carginogen by one or more of the following: National Toxicology Program, I.A.R.C. Monographs, OSHA.
- \*\* The indicated material, if any, does not have an established TLV, but does appear on one or more of the following states hazardous substance lists: Connecticut, Illinois, Michigan, Maine, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Oregon, Rhode Island, West Virginia, and Wisconsin, and is present in this product in amounts greater than 1%.
- & The indicate material if any, is subject to the reporting requirements of SARA Title III, Section 313

SECTION 6 - SPILL, LEAK, AND DISPOSAL PROCEDURES

#### SPILL & LEAK PROCEDURES:

Spilled powders may be shoveled up, and stored in closed containers for rossible normal use or proper disposal. Liquids should be contained and adsorbed with a suitible adsorbent, or flushed to waste treatment area. Flush area with plenty of water. Dilute mineral acid may be used to neutralize final traces immediately after flushing.

\_\_\_\_\_\_\_

Material Safety Data Sheet for PEPTIZOID 143-NP

SECTION 6 - SPILL, LEAK, AND DISPOSAL PROCEDURES continued

\_\_\_\_\_\_

#### WASTE DISPOSAL METHODS:

Caustic waste solution should not be discharged into sewers or streams. Caustic should first be neutralized with dilute acid to a locally acceptable pH, and then well diluted with water. Depending on usage and locality, may also require precipitation and filtration of heavy metals. Otherwise, contact local waste disposal contractor.

#### SECTION 7 - HEALTH HAZARD DATA

#### ROUTES OF EXPOSURE

INHALATION: Airborne concentrations of dust, mist, or spray of this product may cause damage to the upper respiratory tract and even to the lung tissue which could produce chemical pneumonia depending upon severity of exposure.

SKIN CONTACT: This product is destructive to tissues contacted and produces severe burns.

SKIN ABSORPTION: See SKIN CONTACT above.

EYE CONTACT: This product is destructive to eye tissues on contact. Will cause severe burns that result in damage to the eyes and even blindness.

This product, if swallowed, can cause severe burns and complete tissue perforation of mucous membranes of the mouth, throat, esophagus, and stomach.

#### EFFECTS OF OVEREXPOSURE

ACUTE: Corrosive to all body tissues with which it comes in contact.

The chronic local effect may consist of multiple areas of CHRONIC: superficial destruction of the skin or of primary irritant dermatitis. Similarly, inhalation of dust, spray, or mist may result in varying degrees of irritation or damage to the respiratory tract tissues.

#### EMERGENCY AND FIRST AID PROCEDURES

ES: IMMEDIATE Flush eyes with large amounts of water for at least 15 minutes, holdie die apart to ensure flushing of the entire surface.

Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.

Immediately wash contaminated areas with plenty of water for 15 SKIN: minutes. Remove contaminated clothing and footwear, and wash clothing before reuse. Discard any clothing that can not be decontaminated. Seek medical attention immediately.

Get person out of contaminated area to fresh air. If reathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

Material Safety Data Sheet for PEPTIZOID 143-NP

#### SECTION 7 - HEALTH HAZARD DATA continued

IMPESTION: NEVER give anything by mouth to an unconscious person. If wallowed, DO NOT INDUCE VOMITING. Give large quantities of water. If available, give several glasses of milk. If vomiting occurs spontaneously, keep airway clear. Seek medical attention immediately.

#### SECTION 8 - SPECIAL HANDLING PROCEDURES

RESPIRATORY: Respiration protection is not required under normal use. Use NIOSH/MSHA approved respirator where dust, mist, or spray may be generated above TLV limit.

VENTILATION: Use adequate local exhaust ventilation where dust, mist, or spray may be generated, to maintain level below TLV limit.

GLOVES: Impervious gloves should be worn (ex. rubber or neoprene).

EYES: Chemical safety goggles and/or face shield.

OTHER: Chemically resistant shoes and apron. Safety showers and eyewash facilities should be accessible. All contaminated clothing should be washed with soap and water, and dried before reuse.

#### SECTION 9 - SPECIAL PRECAUTIONS

#### HANDLING AND STORAGE PRECAUTIONS::

Avoid contact with strong acids and flammable liquids. May react with tin, zinc, magnesium, and aluminum, generating hydrogen gas which is explosive. FOR POWDERS:

- 1. To perpare solutions, this material dissolves with the liberation of much heat. Add material slowly with constant stirring, to avoid violent solutions.
- 2. Store in a cool dry area, in a closed container.

#### OTHER PRECAUTIONS:

Keep container tightly closed when not in use. Wash thoroughly after handling. Containers even those that have been emptied, will retain product residuated vapors. Always obey hazard warnings and handle empty containers as they were full. Containers must not be used for any other purpose.

The information herein is based on technical data that is believed to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside our control, we make no warrenties, expressed or implied, and assume no liability in connection with the use of this information.

Material Safety Data Sheet for PEPTIZOID 143-NP

#### MATERIAL SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION DATA FREDERICK GUMM CHEMICAL COMPANY, INC. Emergency Telephone Numbers: 538 Forest Street, Kearny, NJ 07032 8:00 AM - 5:00 PM EST (201) 991-4174 PEPTIZOID T&S 24 Hrs: (313) 644-5626 D.O.T. HAZARD CLASS - Cleaner Liquid NOS Effective Date: CHEMICAL FAMILY - Cleaner 05 - 21 - 87CHEMICAL NAME/SYNONYMS - PEPTIZOID T&S FORMULA - Mixture MSDS REVIEWED BY - Keith Frey, V.P. Quality & Regulatory Affairs SECTION 2 - PHYSICAL DATA - > 212 P BOILING POINT (Deg F) VAPOR PRESSURE (mm Hg) — NA VAPOR DENSITY (air=1) - NA SOLUBILITY IN WATER - Complete SPECIFIC GRAVITY (H20=1) - 1.01 VOLATTHE BY VOLUME - 70% EVAPORATION RATE (H2O=1) - >1APPEARANCE & ODOR: Clear amber viscous liquid with mild odor. \_\_\_\_\_\_ SECTION 3 - FIRE AND EXPLOSION DATA \_\_\_\_\_\_ FLASH POINT - None EXTINGUISHING MEDIA: This product is not combustible. SPECIAL FIRE FIGHTING PROCEDURES: 300 Protective clothing and self-contained breathing apparatus should be worn by firefighters in areas where product is stored. Water spray, foam, dry chemical, or carbon provide may be used in areas where product is stored. UNUSUAL FIRK AND EXPLOSION HAZARDS:~ None NEPA HAZARD CLASSIFICATION: DEGREE OF HAZARD \_\_\_\_\_\_ Health (Blue) 4=Extreme Flammability (Red) 3=High Reactivity (Yellow) - 0 2=Moderate 1=Slight. 0=Insignficant TRW-01852 page: 1 Material Safety Data Sheet for PKPTIZOID T&S

0908-3230

SECTION 4 - REACTIVITY DATA

STABILITY: Stable

CONDITIONS TO AVOID: NA

INCOMPATIBILITY:

Strong acids, strong oxidizers, chlorinated organic compounds.

HAZARDOUS DECOMPOSITION PRODUCTS:

Ammonia, carbon monoxide, and carbon dioxide may be formed on burning in a limited air supply.

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: NA

SECTION 5 - HAZARDOUS COMPONENTS

PAINTS, PRESERVATIVES, AND SOLVENTS:

ALLOYS AND METALLIC COATINGS:

HAZARDOUS COMPONENTS

CAS NUMBER TLV PEL. LD50

NONE

TLV = Mg/M3PEL = Mg/M3LD50 = oral, rat, Mg/Kg -NF = None Found

- # The indicated material, if any, is listed as a carginogen or potential carginogen by one or more of the following: National Toxicology Program, 1.A.R.C. Monographs, OSHA.
- \*\* The indicated material, if any, does not have an estabished TLV, but does appear on one or more of the following states hazardous substance lists: Connecticut, Illinois, Michigan, Maine, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Oregon, Rhode Island, West Virginia, and Wisconsin, and is present in this product in amounts greater than 1%.
- & The indicated material, if any, is subject to the reporting requirements of SARA Title the Section 313

SECTION 6 -- SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL & LEAK PROCEDURES:

Liquids should be contained and adsorbed with a suitable adsorbent, or flushed to the waste treatment area. Flush area with plenty of water. Avoid all personal contact.

WASTE DISPOSAL METHODS:

Waste solution should not be discharged into sewers or streams. should first be neutralized to a locally acceptable pH, and then well diluted with water. Depending on usage and locality, may also require precipitation and filtration of heavy metals. Otherwise, contact local

Material Safety Data Sheet for PEPTIZOID TAS

TRW-01853

SECTION 6 - SPILL, LEAK, AND DISPOSAL PROCEDURES continued

waste disposal contractor.

## SECTION 7 - HEALTH HAZARD DATA

#### ROUTES OF EXPOSURE

INHALATION: Inhaling mist or spray is irritating to the upper respiratory tract and depending on the severity of exposure, may cause tissue damage. May also cause a decrease in alertness.

SKIN CONTACT: This product is irritating to tissues contacted and may cause skin damage.

SKIN ABSORPTION: See SKIN CONTACT above.

**EYE CONTACT:** This product is irritating to eye tissues on contact. May cause permanent eye damage.

INGESTION: This product, if swallowed, will be irritating to the mouth, throat, and stomach.

#### EFFECTS OF OVEREXPOSURE

ACUTE: Irritating to all body tissues with which it comes in contact.

CHRONIC: Repeated or prolonged exposure may cause dermatitis. May also cause liver, kidney, and lung injury.

#### EMERGENCY AND FIRST ALD PROCEDURES

EYES: IMMEDIATELY flush eyes with large amounts of water for at least 15 minutes, holding lids apart to ensure flushing of the entire surface. Washing eyes within 1 minute is essential to achieve maximum effectiveness. Seek medical attention immediately.

SKIN: Immediately wash contaminated areas with plenty of water for 15 minutes. Remove contaminated clothing and footwear, and wash clothing before reuse. Discard any clothing that can not be decontaminated. Seek medical attention immediately.

INHALATION: Get person out of contaminated area to fresh air. If breathing has stopped, resuscitate and administer oxygen if readily available. Seek medical attention immediately.

INGESTION: NEVER give anything by mouth to an unconscious person. If swallowed, do not induce vomiting. Give large quantities of water. If vomiting occurs spontaneously, keep airway clear. Seek medical attention immediately.

TRW-01854

### SECTION 8 - SPECIAL HANDLING PROCEDURES

RESPIRATORY: Respiration protection is not required under normal use.

Use NIOSH/MSHA approved respirator where mist or spray may be generated above the TLV limit.

VENTILATION: Use adequate local exhaust ventilation where mist or spray may be generated, to maintain level below the TLV limit.

GLOVES: Impervious gloves should be worn (ex. rubber or neoprene).

EYES: Chemical safety goggles and/or face shield.

OTHER: Chemically resistant shoes and apron. Safety showers and eyewash facilities should be accessible. All contaminated clothing should be washed with soap and water, and dried before reuse.

## SECTION 9 - SPECIAL PRECAUTIONS

#### HANDLING AND STORAGE PRECAUTIONS::

Avoid contact with skin and eyes. Wash thoroughly after handling material. Store in a cool, dry area, in a closed container when not being used. DO NOT STORE with strong acids & oxidizers, chlorinated organic compounds.

#### OTHER PRECAUTIONS:

Keep container tightly closed when not in use. Wash thoroughly after handling. Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they were full. Containers must not be used for any other purpose.



The information herein is based on technical data that is believed to be reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside our control, we make no warrenties, expressed or implied, and assume no liability in connection with the use of this information.

Material Safety Data Sheet for PEPTIZOID T&S

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TRW-01855

## BOWMAN DISTRIBUTION MATERIAL SAFETY DATA SHEET

#### **SECTION I**

PRODUCT NAME	m*A*G	asket•+	le della lant (Partidia et	<b>A</b> )		BOWMAN PAR 26802	T NO.	<del></del>
SUPPLIER			ARINES PRINCE NO			MERGENCY :	ELEPHONE MC	<b>)</b> .
ADDRESS 850 East 72nd	Street,	Clevelan	nd, OH 44103			DATE 7/9/86		
HAZARDOUS MATERIA DOT ORM-D (			ROPER SHIPPING NAME, HA	AZARD CLASS,	HAZARD ID	NO. (49 CFR 17	72.101)	
ADDITIONAL HAZARD IATA Class 3 f								
CHEMICAL FAMILY Sealant (mixtu	re)			FORMULA N.A.				
	S	ECTI	ON II - HAZARD	OUS ING	REDIE	NTS		
CAS REGISTRY NO.	%W	%V	CHE	MICAL NAME(S	5)	. ==-	Listed as a Ca in NTP, IARC 1910(z) (sp	or OSHA
67-63-0	10-15		Isopropyl Alcohol				None Listed	
1332-58-7	50-55		Clay (Kaolin)			_	None Listed	
None	30-35		Modified Natural Resins			·	None Listed	
1309-37-1	<1		Red Iron Oxide				None Listed	
	ļ	<del> </del>						
		<del>                                     </del>						
	ļ	<u> </u>						<del></del>
	<u> </u>	<u>l</u>	<u> </u>					
	_	s	ECTION III - PH	YSICAL	DATA			
BOILING POINT 18	<u>ю</u> °F _	°c	SPECIFIC GRAVITY (H2	O = 1)	1.5			1
VAPOR PRESSURE @ — <sup>68</sup> °F ——°C ☒	mm Hg [	33 ] psi	PERCENT VOLATILE BY	Y VOLUME (%)	Unknown	PERCENT &( WEIGHT (%)	OLID BY	80-90
VAPOR DENSITY (AIR :	, i	2.07	EVAPORATION RATE (	= 1)	Unknown	•		
SOLUBILITY IN WATER	₹	Partial	pH =		Unknown			
APPEARANCE AND OF Reddish-brown cold		lic odor.				IS MATERIAI	L: PASTE	
S	ECTI	ON IV	- FIRE AND EXI	PLOSION	HAZA	RD DAT	A	
FLASH POINT		metho		ABLE LIMITS		LEL	UEL	·
60 ° F	°C	Close	d Cup	<del></del>		2%	12%	

TRW-01856

None Known

None Known

CO<sub>2</sub>, Foam, Dry Chemical SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS

#### **SECTION V - HEALTH HAZARD DATA**

		E - Con	ditions to avoid				THRESHOLD LIMIT VALUE 400 PPM for isopropa
			tion. Vapor above cause dizziness,	_			PERMISSIBLE EXPOSURE LIMIT OTHER LIMIT
Liquid is eye in							OTHER LIMIT
000445453	TEO OF 21.1				A B Alban (a)	12. /	
PRIMARY ROU	ITES OF ENTR	Y INNA	liation [X] Skin C	onta	ct Other (spec	ey ey	es
	AND FIRST AID			mov	e to fresh air. Skin	: wash with s	soap & water.
	water. Get me						
	<u> </u>		· · · · · · · · · · · · · · · · · · ·				
_							
					VI - REA	CTIVIT	Y DATA
CTADU ITV	UNSTABLE		CONDITIONS TO	) AV	OID		
STABILITY	STABLE	1 <sub>x</sub>				•	
	LITY (materials	to avoid	d)				
	'S DECOMPOSITI	ON PRO	DDUCTS:				
None known		1 MAY	OCCUR		CONDITIONS	O AVOID	
HAZARDOUS			L NOT OCCUR				
POLYMERIZAT	ION		E NOT COOCH	×			
						LEAK I	PROCEDURES
			RIAL IS RELEAS			ohol or 1.1 1	-trichloroethane. Ventilate area and
eliminate sourc	<del></del>						
WASTE DISPO	SAL METHOD				<del></del>		<u> </u>
		EPA an	nd local regulation	is.			
CERCLA (Supe	erfund) REPOR	TABLE	QUANTITY (in lbs	5)			
RCRA HAZARI		NO. (40	CFR 261.33)				
Flammable liqu		DUND (V	/OC) (as package	d, mi	nus water)		
					·		
☐ Theoretica	al lb/ga	l 10-	15%			☐ Ana	lytical lb/gal
	SEC'	TION	N VIII - SP	E	CIAL PRO	TECTI	ON INFORMATION
RESPIRATORY Adequate to av	PROTECTION	l (specif	y type)				
1						·- ·-	
		LOC	CAL EXHAUST (s	ecif	v rate)	·	SPECIAL
VENTILATION		<u> </u>		•			
		MEC	CHÂNICAL (gene	rai) (	specify rate)		OTHER
PROTECTIVE None required	GLOVES (spec	fy type)				EYE PRO	TECTION (specify type) ended for large quantity use.
OTHER PROTE	CTIVE EQUIP	MENT	7.4			1	to targe quartity way.
None							
DDECAUTE COM	0 TO DE 2172-					L PRE	CAUTIONS
	S TO BE TAKE ear heat, sparks		NDLING AND ST ie.	ORIN	NG		
OTHER PRECA			<del></del>			<del></del>	
Avoid prolonge	d breathing of	vapors a	and contact with e	yes.			
							·
							· · · · · · · · · · · · · · · · · · ·

\_ TRW-01857

## BOWMAN DISTRIBUTION MATERIAL SAFETY DATA SHEET

#### **SECTION I**

PRODUCT NAME  Periodicx Prints Control	BOWMAN PART NO. 26804
SUPPLIER BOWMAN DISTRIBUTION, BARNES GROUP II	EMERGENCY TELEPHONE NO.
ADDRESS 850 East 72nd Street, Cleveland, OH 44103	DATE 7/9/86
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NA DOT ORM-D Consumer Commodity	ME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)
ADDITIONAL HAZARD CLASSES (as applicable) IATA Class 3 flammable liquid, resin solution, fl	ammable UN 1866
CHEMICAL FAMILY Sealant (mixture)	FORMULA N.A.

#### **SECTION II - HAZARDOUS INGREDIENTS**

CAS REGISTRY NO.	CAS REGISTRY NO.		CHEMICAL NAME(S)	Listed as a Carcinoger in NTP, IARC or OSHA 1910(z) (specify)
67-63-0	10-15		Isopropyl Alcohol	None Listed
1332-58-7	30-35		Clay (Kaolin)	None Listed
None	50-55		Modified Natural Resins	None Listed
•				
	<u> </u>			

#### **SECTION III - PHYSICAL DATA**

BOILING POINT 180 °F	°c	SPECIFIC GRAVITY (H <sub>2</sub> O = 1)	1.5		
VAPOR PRESSURE @°C ☑ mm H	33 g 🔲 psi	PERCENT VOLATILE BY VOLUME (%)	Unknown	PERCENT SOLID BY WEIGHT (%)	80-90
VAPOR DENSITY (AIR = 1)	2.07	EVAPORATION RATE ( = 1)	Unknown		
SOLUBILITY IN WATER	Partial	pH =	Unknown		
APPEARANCE AND ODOR Black color, alcoholic odo	г.			IS MATERIAL: PASTE	

### **SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT	method used	FLAMMABLE LIMITS	LEL	UEL	
°	C Closed Cup		2%	12%	
EXTINGUISHING MEDIA	- <del> </del>				
CO <sub>2</sub> , Foam, Dry Chemical					
SPECIAL FIRE FIGHTING PRO	CEDURES				
None Known					
					_
UNUSUAL FIRE AND EXPLOS	ION HAZARDS				
None Known					
<u> </u>					

26804

SECTION V - HEALT  EFFECTS OF OVEREXPOSURE - Conditions to avoid  Eye irritant; moderately toxic by ingestion. Vapor above TLV is					THRESHOLD LIMIT VALUE 400 PPM for isopropyl alco				
								PERMISSIBLE EXPOSURE LIMIT	
Liquid is eye irr		rio cai	n cause dizziness	, naus	<del></del>			THER LIMIT	
PRIMARY ROU	TES OF ENTRY	Inh	alation 🔀 Skin	Conta	act Other (s	specify)	eye		
	ND FIRST AID		CEDURES ician. Inhalation:	remo	ve to fresh air.	Skin: wash	with s	soap & water.	
	water. Get med								
						· · · · · · · · · · · · · · · · · · ·			
			SECTI	01	VI - RE	ACTI	VIT	Y DATA	
	UNSTABLE		CONDITIONS	O AV	/OID				
STABILITY	STABLE	×		_					
Strong oxidizer HAZARDOUS [	I ITY (materials : s DECOMPOSITIO		<u> </u>						
None known		1 MA	YOCCUR	_	CONDITION	IS TO AVO	DID		
HAZARDOUS POLYMERIZAT	ION	1	LL NOT OCCUR	+×					
		SFC	TION VI	. 9	SPILL O	RIF	\K I	PROCEDURES	
	TAKEN IN CASI	MAT	ERIAL IS RELEA	SÉD	OR SPILLED				
Scrape or wipe eliminate sourc		closed	containers. Clea	in are	a with isopropy	/I alcohol (	or 1,1,1	I-trichloroethane. Ventilate area and	·
WASTE DISPO									
-	_	EPA a	and local regulation	ons.					
						_			
CERCLA (Supe None	rfund) REPORT	ABLE	QUANTITY (in It	bs)	·····				
RCRA HAZARI		IO. (40	CFR 261.33)						
Flammable liqu VOLATILE ORG		UND (	(VOC) (as packag	ed, m	ninus water)				
·	<del></del>				<del></del>	1			
Theoretical	i lb/gal	10	-20%		- <del></del>		Anal	yticalIb/gal	
				PE	CIAL PR	OTE	CTI	ON INFORMATION	
RESPIRATORY  Adequate to avo			ity type)						
			····						
		LO	CAL EXHAUST (	speci	fy rate)			SPECIAL	
VENTILATION		ME	CHANICAL (gen	erai)	(specify rate)			ÖTHER	
PROTECTIVE ( None required	GLOVES (specif	y type	*)					L TECTION (specify type) ended for large quantities.	
OTHER PROTE None	CTIVE EQUIPA	IENT							
			RECTION	114	CDEC	IAL D	DE	CAUTIONS	_
		•	コニレ ロレバ	ıΙΛ		IAL	nE'	CAU I IUN3	
PRECAUTIONS Do not store ne		IN HA	ANDLING AND S		NG				
		IN HA	ANDLING AND S		NG				

TRW-01859

0908-3237



TRW 265 3RD ST CAMBRIDGE, MA C2142

Attention: Safety Officer

In compliance with the Federal OSHA Hazard Communication Standard and various state "Right-To-Know" laws, Bowman Distribution is providing **Material Safety Data**Sheets for your use. These sheets contain the information your company will use when training your employees regarding specific health hazards that may affect them in the workplace.

The sheets contained are for products your company has recently purchased. New sheets will be supplied when different products covered by these laws are ordered or if the formulation changes on a product that you have previously acquired.

Enclosed are MSDS's on the following Bowman part numbers:

26804

TRW-01860

Hydrogen Perox ido 50%

PUFOUT

E. & F. KING & CO., INCORPORATED 640 PLEASANT ST. NORWOOD, MASS.

Maria Sarah				
MARK	adirent - a			• •
100	1:	197	9	
1				

### MATERIAL SAFETY DATA SHEET

	•	SECT	I MOIT		
MANUFACTURER'S NAME			EMER	GENCY TELEPHON	E NO.
ADDRESS (Number, Street, CI Wilmington, Dela	ity, Stote, and ZIP Co	de)			
chemical name and synt peroxide (30%, 3	ONYMS HVdro		cide, TRADE NAME	AND SYMPHYMS	Tysul®WW,
CHEMICAL FAMILY Peroxide	<del> </del>		FORMULA H202	peroxygen	compounds *
SECTION	N II HAZA	ARDOUS	INGREDIENTS OF	MIXTURES	
Less than 52% hy	drogen per	oxide	(*30%, 35% o		ogen )
in water	42421		peroxide i	n water.	
		on III	PHYSICAL DATA		
BOILING POINT	106- 114 c	222- 237 F	SPECIFIC GRAVITY (H, O=1)		1.1-1.2
VAPOR FRESSURE (mm Hg)	25-18	25~18	PERCENT VOLATILE BY VOLUME (%)	approx.	99.8
VAPOR DENSITY (AIR-1) Not det	termined		EVAPORATION RATE (Eth	er = 1)	Less than 1
SOLUBILITY IN WATER	omplete			•	
APPEARANCE AND ODOR		th a sli	htly pungent odor	•	
SECTIO			EXPLOSION HAZA		
FLASH POINT (Method Used)			FLAMMABLE LIMITS	LEL	UEL
Non-flammable	-1-4 <i>f</i> :	1 1	Not applicable	AUTO, IGNIT.	
SPECIAL FIRE FIGHTING PR	ROCEDURES		this material is involved.	TEMP.	
_			luding Chemical sa	fety goggl	es and
self-contained by	CLOSE LIST A PIOC				
Spontaneous comb	oustion can	occur i	f allowed to dry i plosive mixtures c n peroxide is conc	n contact	with com-
chemicals, parti	cularly if				y evaporation
	SECTION	V HEA	ilth Hazard Dat	ſΑ	
THRESHOLD LIMIT VALUE	(ACGIH)		TIME WEIGHTED AVERAGE  1 ppm (90% H20)		
EFFECTS OF OVEREXPOSUE	RE offocts	may bo d	elayed. Causes ski		
causes eye burns	s, effects	may be u	slayeu. Causes Ski	n lilliati	on.
	<del></del>				
					i
EMERCENCY AND FIRST A	IN BROCESULEES				
EMERGENCY AND FIRST AI	D PROCEDURES	mediatel	flush eyes with	plenty of	water for
			y flush eyes with ian. Flush skin wi		

, ...

the state of the s

<del></del>		SECT	MON	VI	REACTIVITY DA	λτα
STABILITY	UNSTABLE	х	CONDIT	TIONS TO	Avoid Contaminat	ion from any source may
	STABLE		large	quai	ntities of oxyge	n, with generation of contract of the contract
INCOMPATIBILITY	Materials to a	<u>.                                    </u>				
<u>Heavy meta</u>	ls, org	anic :		<u>ials</u>	(especially vir	nyl monomers), and dust.
HAZARDOUS DECO	MPOSITION	PRODUCT	5 			
HAZARDOUS POLYMERIZATION	MAY OCCU	<b>a</b>	CON	DITIONS	TO AVOID	· 
	WILL NOT C	CCUR	х			·
	SECTI				OR LEAK PRO	
STEPS TO BE TAKES Flush to a	n n case m n appro	ATERIAL	s RELEA	ased on	SPILLED ewer by flooding	g with water applied
quickly to	entire	spil	1 are	ea.		
			<u>-</u>	· · · · · · · · · · · · · · · · · · ·		
WASTE DISPOSAL M					<del></del>	
·		·		<u> </u>		
S	CTION	VIII	SPE	CIAL	. PROTECTION	INFORMATION
RESPIRATORY PRO None for n	TECTION (SO	eclfic Type	e)			
VENTILATION	LOCAL EXH	AUST		e ve	ntilation	special Self-contained breathing apparatus for
	MECHANIC	AL (Genera				OTHER EMERGENCIES.
	Unknow	'n	<u> </u>			
PROTECTIVE GLOV	ES		···		EYE PROTECTION	
Neoprene.		ubber	or v	iny1	Chemical safe	ety goggles or face
						shield.
OTHER PROTECTIVE Safety hat			afety	sho	es or boots.	
	S	ECTIC	KI NO	S	PECIAL PRECAU	TIONS
PRECAUTIONS TO B	ETAKEN IN	h eye	G AND S	STORING	clothing and cor	mbustible materials.
Avoid cont	aminati	on fr	om an	y so	urce, including	metals, dust and organi
materials.	<u>Store</u>	in co	<u>01, ν</u>	enti.	lated, non-combi	ustible area in vented
		water	sour	ce a	vailable for di	luting.
OTHER PRECAUTIO	NS					

E- 13319

Date: 10/77

For more information rater to: Du Pont "Storage and Handling of Hydrogen Peroxide Solutions" E-11820

Manufacturing Chemists Association SD-53 National Fire Protection Association Manuals 49, 491M



### MATERIAL SAFETY DATA SHEET

P.O. Drawer 1410 - 1600 E. Hill St., Long Beach, CA 90801 Contact: Safety Department - Telephone: (213) 427-5471

February 1989

#### WARNING STATEMENT

DANGER! Extremely Flammable. Keep away from heat, sparks and open flame.

Vapor reduces oxygen available for breathing and may cause suffocation in confined spaces. Use only with adequate ventilation. **Odor may not provide adequate warning of potentially hazardous** concentrations. Vapor is heavier than air and collects in low levels.

Liquid may cause freeze burn similar to frostbite.

#### I. Product Identification

Product Name: Petrolane Propane

Chemical Name: Propane Synonyms: LP-Gas, Bottled Gas

Chemical Family: Paraffinic Hydrocarbon

Chemical Formula: C<sub>3</sub>H<sub>4</sub>

DOT Proper Shipping Name: Liquefied Petroleum Gas

DOT Hazard Class: Flammable Gas

DOT I.D. Number: UN1075

Transportation Emergency Telephone: 800-424-9300 (CHEMTREC)

NFPA Classification:

Health 1 Slightly Toxic

Fire 4 Extremely Flammable

Reactivity 0 Stable

#### II. Hazardous Ingredients

			OSHA	ACGIH
Component	CAS Number	%	PEL	TLV
Ethane	74-84-0	0-6	None established	Simple asphyxiant
Propane	74-98-6	87-97	1000 ppm (8hr)	Simple asphyxiant
Propylene	115-07-1	0-5	None established	Simple asphyxiant
Butane	106-97-8	0-2.5	None established	800 ppm (8 hr)

#### III. Physical Date

Boiling Point: -44°F

Melting Point: -309°F Vapor Pressure: 208 psig (max.) @ 100°F

Vapor Density (Air=1): 1.5

Specific Gravity (H<sub>2</sub> 0=1): 0.504

Appearance and Odor: Colorless, odorless in pure form.

% Volatile by Volume: 100% Solubility in Water: Insoluble Evaporation Rate(Bu Ac=1): N/A Gas Volume @ Atm. Pressure & 60°F

(Cu. ft. gas/gal. liquid): 36.4

Propane contains a foul smelling, skunk-like warning agent(odorant). The odorant is effective, in most instances, but not everyone can smell the odor. The ability of people to detect odors varies widely. Also, certain chemical reactions with material in the propane system can reduce the propane odor level. No odorant will be 100% effective in all circumstances. If odor level appears to be weak, notify propane supplier immediately.

#### IV. Fire and Explosion Data

Flash Point (Method Used): -156°F (estimated)

Flammable Limits (% Volume in Air): Lower 2.1%

**Upper 9.5%** 

Extinguishing Media: Dry chemical, foam or CO2 for small fires. Stop flow of gas first.

Special Fire Fighting Procedures and Precautions: Eliminate sources of ignition. Evacuate area. Notify fire department. Allow only trained, properly protected personnel in area. Shut off source of gas, if possible. Allow fire to burn itself out after gas flow is shut off. High volume water supply can be used to cool heat-exposed pressure containers and nearby equipment. Approach a flame enveloped container from the side, never the head ends. Use extreme caution when applying water to a container which has been exposed to heat or flame for more than a short time. Shock of cool water on hot metal could cause container rupture. For uncontrollable fires and when flame is impinging on container, withdraw all personnel and evacuate surrounding vicinity immediately.

Unusual Fire and Explosion Hazards: Products of combustion may yield carbon monoxide, a toxic gas. Uncontrolled vapors spread rapidly, are heavier than air and are extremely flammable.

#### V. Reactivity Data

Conditions to Avoid: High heat, sparks, open flame Stability: Stable

Materials to Avoid: Strong oxidizing agents

Hazardous Decomposition Products: Incomplete combustion can cause carbon monoxide, a toxic gas.

Hazardous Polymerization: Will not occur Conditions to Avoid: None

S-775

TRW-01863

#### VI. Health Hazard Data

Product is not listed as carcinogenic by NTP, IARC or OSHA. Product may contain a trace, but detectable amount of benzene, a chemical listed by the State of California and known to cause cancer or reproductive toxicity.

Routes of Entry / Acute Effects of Overexposure:

<u>Inhalation:</u> Exposure to high concentrations of the vapor causes dizziness, drowsiness, nausea or unconsciousness due to anesthetic properties.

 $\underline{Skin\ Contact:}\ Liquid\ can\ cause\ freeze\ burns\ similar\ to\ frostbite\ if\ contact\ with\ skin\ occurs.$  No skin absorption is expected.

Eye Contact: Liquid can cause freeze burns if contact with eyes occurs.

<u>Ingestion:</u> Ingestion is not expected to occur in normal use.

Chronic Effects of Overexposure: No abnormal reactions reported following exposure to 1000 ppm for 8 hours per day, 5 days per week, for 2 weeks.

Medical Conditions Generally Aggravated by Exposure: Persons with chronic respiratory diseases should avoid exposure.

#### VII. Emergency and First Aid Procedures

Eye Contact: Flush with water. Obtain medical assistance if contact with liquid has occurred.

Skin Contact: If freeze burn occurs, remove contaminated clothes, shoes and jewelry. Immerse burned area in warm (not hot) water. Keep immersed. Call for medical assistance.

Inhalation: Remove victim from further exposure and into fresh air. Provide oxygen if breathing is labored. If victim is unconscious, seek immediate medical attention. If breathing has stopped, give artificial respiration.

Ingestion: Not expected to occur in normal use.

#### VIII. Spill or Leak Procedures

Product is extremely flammable. Vapor is heavier than air and may collect at lower levels. Flammable concentrations may be present helpy nose level. If there is a leak but no fire, do not light the escaped gas. Eliminate all ignition sources. Do not smoke, use a nearby phone or actuate electrical switches. Evacuate the area. If possible, remove leaking container to safe area. Stop flow of gas or allow vapor to disperse in a safe area. Water spray can be used to help dilute vapor concentration in air.

Dispose of gas only by controlled burning in compliance with local laws and regulations.

#### IX. Handling and Storage Precautions

Store in an authorized location (outside, detached storage is preferred) with adequate ventilation. Keep away from heat and ignition sources. Inspect cylinders frequently for leaks, dents, gouges and corrosion with emphasis on bottom of cylinder. Store cylinders in upright position or with pressure relief valves in vapor space. Do not drop or abuse cylinders. Keep container valve closed and plugged when not in use. Install protective caps when cylinders are not connected for use. Empty containers retain some residue, so they should be treated as if they are full.

#### X. Personal Protection Information

Ventilation: Use adequate ventilation to maintain exposures below recommended limits.

Respiratory Protection: Use a NIOSH-approved respirator if area is thought to contain unknown concentration of gas.

Eye Protection: Use safety goggles or safety glasses with side shields.

Protective Clothing: No special garments are necessary, but avoid skin contact with fiquid because of possibility of freeze burn. Propane resistant gloves are recommended.

#### XI. Communication with Employees and Purchasers

This Material Safety Data Sheet (MSDS) alerts the reader to the potential safety and health hazards of propane. It also contains valuable reference material relating to the safe use and handling of the product. Make sure that this information is shared with all employees and purchasers who use or handle the product. It is an important part of the OSHA hazard communication program.

This information is believed to be accurate as of the date of issue, but is offered without guarantee. Conditions of use and suitability for use are beyond Company control, therefore, all risks of use of the product are assumed by the user. COMPANY EXPRESSLY DISCLAIMS ALL WARRANTIES OF EVERY KIND INCLUDING WARRANTIES OF MERCHANTIBILITY AND FITNESS FOR ANY PARTICULAR PURPOSE. Company assumes no responsibility for any injuries or damages caused by the product even if safety procedures are followed as outlined herein. Nothing herein is intended to be construed as permission or recommendation for use of the product in any manner which might infringe existing patents.

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MATERIAL SAFETY DATA SHEET

Page 1

COOK'S INDUSTRIAL LUBRICANTS 5 NORTH STILES STREET LINDEN, N. J. 07036

REVISION DATE 13-JUN-88

DATE ISSUED 25-0CT-88

IDENTIFICATION AND EMERGENCY INFORMATION

COOK'S PRODUCT NAME:

COOK'S PRODUCT #:

Gook-Drau 4625

J5P701G

CHEMICAL NAME:

CAS #'S:

Petroleum-based E. P. Drawing Oil

Mixture

PRODUCT APPEARANCE AND ODOR:

CHEMICAL FAMILY:

Petroleum hydrocarbon

Amber liquid, petroleum odor

**EMERGENCY TELEPHONE:** 

Petroleum-based lubricating oil

(201) 862-2500

COMPONENTS AND HAZARD INFORMATION

COMPONENTS:

SYNONYMS:

HAZARD DATA (TLU, LD50, LC50, ETC. ): W/W

Petroleum-based lubricating oil

TLU 5 mg/meter cubed

64742-53-6 or CAS #'S 64742-52-5

(as an oil mist)

Chlorinated Paraffin

n/e

CAS #'s

68920-70-7

n/e

Proprietary additives

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS):

Health

Flammabilitu 1

Reactivity 1

2

TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION:

Compound or lubricant. Metal cutting, drawing or drilling.

Dry, liquid or paste. NOI

EMERGENCY FIRST AID

EYE CONTACT:

If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT:

In case of skin contact, remove contaminated clothing and wash skin thoroughly with soap and water.

TRW-01865

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SECTION VII PRECAUTIONS FOR SA	FE HANDLING USE
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR S	PILLED: IN CASE OF SPILL, CONTAI
AND RECOVER BULK FLUID. DO NOT USE WATER. SOAK UP	
INERT MATERIAL. PUT IN A SUITABLE CONTAINER. DISPO	OSE OF IN ACCORDANCE WITH LOCAL,
STATE AND FEDERAL REGULATIONS.	
WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH	LOCAL, STATE AND FEDERAL
REGULATIONS. AVOID CONTAMINATION OF SEWERS AND WAT	
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: AVO	ID CONTACT WITH EYES, SKIN AND
CLOTHING. REMOVE CONTAMINATED CLOTHING. LAUNDER BEF	
AFTER HANDLING.	
OTHER PRECAUTIONS: SINCE EMPTIED CONTAINERS RETAIN P	RODUCT RESIDUE, FOLLOW LABEL
WARNINGS EVEN AFTER CONTAINER IS EMPTIED. DO NOT M	IIX THIS PRODUCT WITH NITRITES
DUE TO THE POSSIBILITY OF A REACTION PRODUCING NITE	OSMAINES. AVOID BREATHING MIST
OR HOT VAPORS.	
SECTION VIII CONTROL MEASURES.	th andready telepop and require in prime give a grant of the control of the contr
RESPIRATORY PROTECTION (Specify Type) NIOSH APPROVED RESPIRATOR IF EXPOSED TO HOT	VAPOR OR MIST.
VENTILATION LOCAL EXHAUST  RECOMMENDED	SPECIAL N/A
MECHANICAL (General) N/A	OTHER N/A
PROTECTIVE GLOVESNEOPRENE-OIL IMPERVIOUS EVE PROTECTION	SAFETY GLASSES OR GOGGLES
OTHER PROTECTIVE EQUIPMENT HISE AS DECILIPED TO AUGID SKIN O	CONTRACTO

WE BELIEVE THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE RELIABLE, BUT THEY ARE GIVEN WITHOUT WARRANTY OR GUARANTEE OF ANY KIND, EXPRESSED OR IMPLIED, AND WE ASSUME NO RESPONSIBILITY FOR ANY LOSS, DAMAGE, OR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING OUT OF THEIR USE.

HYGENIC PRACTICES: WASH AFTER HANDLIN.

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#### MASSACHUSETTS MSDS

Form Approved Sudget Sureau No. 44-R1387

## U.S. DEPARTMENT OF LABOR

WORKPLACE STANDARDS ADMINISTRATION
Bureau of Labor Standards

## MATERIAL SAFETY DATA SHEET

2021-6161

FORMULA /	TRADE SE	CRET	· SECTION I	•	•
MANUFACTURE	-	FRANKISKA		1	Y TELEPHONE NO.
ADDRESS (Num	ber, Screet, City	, State, and ZIP Code	BOX 46030 - FRAN	KLIN PARK, CLEVELA	AND, OHIO 44146
IDENTITY	TUF-DRAW			DATE PREPARED	4/26/89
CHEMICAL	FAMILY	Perkuran	COMMEN!		·

- SECTION II HAZARDOUS ING	REDIENTS		
HAZARDOUS COMPONENTS:	OSHA PEL	ACGIH TLV.	7.
SEVERELY HYDROTREATED NAPTHENIC DISTILLATES	5mg/M <sup>3</sup>	TWA 3 5mg/M	20-40
CAS #64742-52-5 AND CAS #64742-53-6		STEL 3 10mg/M	
TRIETHANOLAMINE CAS #102-71-6	NOT E	TABLISHED	1-5
PROPRIETARY INGREDIENTS NOT FOUND ON THE MOST	·		
RECENT MSL.			
		·	

,	SECTION III PHYSICAL-DATA								
SOILING POINT (F.) SPECIFIC GRAVITY (H20=1) 1.068									
VAPOR PRESSURE (mm Hg.)	(70°F.)	<b>\( \)</b>	PERCENT VOLATILE BY VOLUME (%)	L2%					
VAPOR DENSITY (AIR=1)		>1	EVAPORATION RATE ( BITYI. =1)	ζ1					
SOLUBILITY IN WATER	EM	LSIFIABLE	ACETATE .	8.6					
APPEARANCE AND ODDR	AMBER OIL WITH	•		< 30°F.					

SECTION IV FIRE AND EX	PLOSION HAZARD DAT	A	, •••
FLASH POINT (Method used) 325°F. (ASTM D-92)	FLAMMABLE LIMITS	NOT DE	Uei TERMINED
WATER FOG, DRY CHEMICAL, CO., OR	FOAM AUTOIGNITION T	EMP.	5450°F.
	NED BREATHING APPARAT	us.	
KEEP FIRE EXPOSED CONTAINERS COOL			
HOT VAPORS FORM	EXPLOSIVE MIXTURES W	ITH AIR.	

		÷	ECTIÓN	ĨΛ	RE	ACTIVITY DA	ATA			•
ETABILITY .	1 45	LYBIE,		CC	SHOITIONS	TO AVOID				,
· .		UE	X		SPARKS	AND OPEN F	LAMES			
COMPATABILITY			STI	RON		AND OXIDAN	<del></del>			
UPON COMBUST	POSITION:	N PRODUCTS	CO	, C	0, HC	, OXIDES OF	SULFUR	AND NI	rogen	
HAZARDOUS MAY DECUR CONDITIC CTO'AVOID										
POLYMERIZATION		WILL HOT OC	CUR		Х	NONE				
-					·					
•		Su '	TION VI	<u> </u>	HEALT	H HAZARD [	DATA		·	
ROUTE(s) OF	ENTRY	: INHA	LATION	?	<del></del>	SKIN	?		INGE	STION?
		x				<u> </u>	•	•	. ·	**************************************
HEALTH HAZAR	DS (A	CUTE & CH	RONIC):	: c	AUSES	IRRITATION:	MAY BE	SKIN D		
PROLONGED OF				•		E IRRITATION				MIST MAY
CAUSE MILD R	ESPIR	ATORY IRR	ITATION	٧	INGEST	ION: SMALL	AMOUNTS	ASPIRA	TED IN	TO LUNGS
URING INGEST				AUS	E CHEM				00111 0	
CARCINOGENIC	111:	NOT LIST				NOT LISTER				EGULATED?
	<del></del>	MOI DIST	.EU	<u>.                                    </u>		NOT LISTER	·	<del></del>	NOL	LIGILED
			<del></del>		· 	<del></del>		<del> </del>		
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	·			·						
		:					<u></u>			
SICNS & SYMP	Toms	OF EXPOSU	RE:	01	L MIST	INHALATION	MAY CAU	se dizz	iness,	NAUSEA
AND DIFFICU								4	•	
		•				•				
HEDICAL COND	TTION	S GENERAL	LY ÁGG	RAV	ATED R	Y PYPOSITOR.	SENSITI	VE DRY	SKIN.	•
•					*******	•	• •			
EMERGENCY AN	D FI	RST AID P	ROCEDUE	æs	· I	CASE OF CO	NTACT, I	mmed I a'	TELY E	USH EYES
						. CALL A P				
AND WATER.	IF S	WALLOWED	DO NOT	IN	DUCE VO	MITING. GE	T MEDICA	L ATTE	NTION.	REMOVE 23
						BEFORE REI				
1						N IF NECESSA				
								<del></del>		

#### BETZ LABORATORIES, INC. 4636 SOMERTON ROAD, TREVOSE, PA. 19047 BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 1-800-877-1940

REAGENT

PHENDEPHTHALETHETHETCATOR

CODE 212

(PAGE 1 OF 3)

EFFECTIVE DATE 02-16-91

MASS, REG. #

PRINTED: 01-31-98

REVISIONS TO SECTIONS: -; EDIT: APPENDIX

REAGENT APPLICATION : FIELD TEST REAGENT

-----SECTION 1-------HAZARDOUS INGREDIENTS----------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC REAGENT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. FOR MASSACHUSETTS, THE PERCENT OF HAZARDOUS INGREDIENT IN THE FORMULATION IS INDICATED BELOW.

ETHYL ALCOHOL(ETHANOL)\*\*\*CAS#64-17-5;FLAMMABLE;EYE IRRITANT;MAY CAUSE DEFATTING DERMATITIS, DIZZINESS AND HEADACHE; PEL/TLV: 1000PPM. ( 41.0-50.0%

----TYPICAL PHYSICAL DATA----------SECTION 2---

PH: AS IS

(APPROX.) 5.6 ODOR: ALCOHOL

FL.PT.(DEG.F): 78.8 SETA(CC)

SP.GR. (70F)OR DENSITY: 0.930

VAPOR PRESSURE(mmHG): ND

VAPOR DENSITY(AIR=1): ND

VISC cps70F: ND

%SOLUBILITY(WATER): 100

EVAP.RATE: <1 ETHER#1

APPEARANCE: COLORLESS

PHYSICAL STATE: LIQUID

FREEZE POINT(DEG.F): ND

----SECTION 3-----REACTIVITY DATA----

STABLE MAY REACT WITH STRONG OXIDIZERS DO NOT CONTAMINATE BETZ TANK

CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

REAGENT . PHENOLPHYHALEIN INDICATOR

----SECTION 4-----HEALTH HAZARD EFFECTS------

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

SLIGHTLY IRRITATING TO THE SKIN MAY CAUSE DERMATITIS.

ACUTE EYE EFFECTS \*\*\*

MODERATELY IRRITATING TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

VAPORS, GASES, MISTS OR AEROSOLS MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT PROLONGED EXPOSURE MAY CAUSE DIZZINESS AND HEADACHE.

CHRONIC EFFECTS OF OVEREXPOSURE\*\*\*

PROLONGED OR REPEATED EXPONURE MAY CAUSE ONS DEPRESSION; MAY CAUSE DEFATTING TYPE DERMATITIS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*
NOT KNOWN

#### SYMPTOMS OF EXPOSURE \*\*\*

EXCESSIVE DERMAL EXPOSURE CAUSES DEFATTING AND DRYING OF SKIN; EXCESSIVE INHALATION OF VAPORS CAUSES DIZZINESS, HEADACHE AND NAUSEA.

REMOVE CONTAMINATED CLOTHING WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES.IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INCESTION\*\*\*

GENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM SPECIFIC- DILUTE CONTENTS OF STOMACH, INDUCE VOMITING BY ONE OF THE STANDARD METHODS, IMMEDIATELY CONTACT A PHYSICIAN

----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----SPILL INSTRUCTIONS\*\*\*

GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

SPECIFIC- REMOVE IGNITION SOURCES. FLUSH AREA WITH WATER. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

GENERAL-WATER CONTAMINATED WITH THIS REAGENT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

REAGENT(AS (S)- INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE).PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, OR FOAM. WATER SPRAY SHOULD BE USED ONLY TO COOL FIRE-EXPOSED CONTAINERS AND DISPERSE VAPORS.

REAGENT: PHENOLPHTHALEIN INDICATOR

-----SECTION 7-------SPECIAL PROTECTIVE EQUIPMENT-------USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION\*\*\*

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT REAGENT EXPOSURE IS LIKELY. USE A RESPIRATOR WITH ORGANIC VAPOR CARTRIDGES.

RECOMMENDED SKIN PROTECTION\*\*\*

RUBBER GLOVES

WASH OFF AFTER EACH USE, REPLACE AS NECESSARY

RECOMMENDED SYS PROTECTION\*\*\*

SPLASH PROOF CHEMICAL GOGGLES

STORAGE INSTRUCTIONS\*\*\*

KEEP CONTAINER CLOSED WHEN NOT IN USE.

KEEP AWAY FROM FLAMES OR SPARKS, BOND CONTAINERS DURING FILLING OR DISCHARGE WHEN PERFORMED AT TEMPERATURES AT OR ABOVE THE PRODUCT FLASH FOINT.

HANDLING INSTRUCTIONS\*\*\*

FLAMMABLE STORE IN EXPLOSIVE PROOF AREA WHERE ELECTRICAL EQUIPMENT MEETS N.F.P.A.CODE

THIS MEDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD 

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

APPENDIX: REGULATORY INFORMATION

... TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY ...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: DO01=IGNITABLE

...DOT HAZARD/UN##ER GUIDE# IS: FLAMMABLE LIQUID UN1993/#27

... CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

... SARA SECTION 302 CHEMICALS: NONE

... SARA SECTION 313 CHEMICALS: NONE

... SARA SECTION 312 HAZARD CLASS: DELAYED(CHRONIC) AND FIRE

NFPA/HMIS : HEALTH - 1 ; FIRE - 3 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

#### **SECTION I - IDENTIFICATION**

Phosphor 1.25%							
CHEMICAL FAMILY	FORMULA	TRADE NAME					
Copper	Mixture	Alloy 505					
DESCRIPTION		CAS NO.					
Metal		Not assigned/Mixture					

#### **SECTION 11 - NORMAL HANDLING PROCEDURES**

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Precautions needed for abrasive, melting or other operations generating a dust or fume. Do not get dust or fume in eyes, on skin, or on clothing. Do not take internally. Wash thoroughly with soap and water before eating or smoking. Avoid breathing dust or fumes.

PROTECTIVE EQUIPMENT		VENTILATION REQUIREMENTS	
Eyes Gloves Other	Goggles Impervious NIOSH/MSHA approved high efficiency particulate respirator if excessive dusting/fumes occur	As required to keep airborne concentrations below TLV for copper and tin.	

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL		OSHA PEL	LØ 50	LC 50	SIGNIFICANT EFFECTS
Copper	Dust Fume	1 mg/m <sup>3</sup> 0.1 mg/m <sup>3</sup>	TD <sub>LO</sub> = 120 ug/kg (human)	No data	Inhalation – metal fume fever, respiratory tract irritation
Tin	Dust	2 mg/m <sup>3</sup>	No data	No data	Mucous membrane irritation, accumulation of dust in lung (pneumoconiosis)

#### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT		OSHA CLASSIFICATION		FLAMMABLE	LOWER	UPPER
METHOD	Not Applicable	icable Non-combustibe solid			N/A	N/A
EXTINGUISHIN Us		edia suitable for sur	rounding materia	ls.		_
1	HAZARD & FIRE FIGHTIP		Use NIOSH/MS	HA approved pos	sitive pres	ssure
sel	f-contained breat	hing apparatus wher	any material is	involved in a fir	e.	

#### **SECTION V - HEALTH HAZARD DATA**

one established for mixture (copper fume 0.2 mg/m <sup>3</sup> , tin 2 mg/m <sup>3</sup> , ACGIH 1985-86).
Dust and fume - sneezing, congestion, metallic taste, nausea, chills, fever
ust of fume: Wash with emergency first-aid procedures soap and water before eating or smoking. If an irritation develops, call a physician.
Dust or fume: Flush thoroughly with water for 15 minutes, call a physician.
Dust: Not a likely route of exposure. If ingested, call a physician.
Dust or fume: Remove victim to fresh air, call a physician.

#### SECTION VI - TOXICOLOGY (Product)

ACUTE ORAL LD 50 ACUTE DERMAL LD 50	No data for alloy  No data for alloy	CARCINOGENICITY MUTAGENICITY EYE IRRITATION	Not card or inhala Not know Dust is in	cinogenic by oral, dermal tion routes wn to be mutagenic rritating
ACUTE INHALATION LC 50	No data for alloy	PRIMARY SKIN IRRIT		Dust may be irritant
PRINCIPAL ROUTES OF ABSO Inhalation of dust				<del></del>
Skin, eye and muc	ous membrane irritatio		-	
EFFECTS OF CHRONIC EXPO	SE liver or kidney or sp	under proper indus leen effects, accur	strial nand nulation of	lling conditions. Chronic f dust in lungs.

#### SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)

#### ACTION FOR MATERIAL RELEASE OR SPILL

Dust or fume - Wear NIOSH/MSHA approved high efficiency particulate respirator. Follow OSHA regulations for respirator use. (See 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an appropriate container. Wash all contaminated clothing before reuse.

In the event of a large spill, use the emergency telephone number shown on the front of this sheet.

#### TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

#### WASTE DISPOSAL METHOD

Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

SECTION VI	 IDDING	DATA
APE III IN VI	 IPPINE.	IJAIA

D.O.T. CI				•		
	Not re	egulated		<del></del>		<del> </del>
			SECTION	ON IX - REAC	CTIVITY DATA	
STABLE	X UNSTABLE	AT	°c	o <sub>F</sub>	HAZARDOUS	MAY OCCUR
<del>-</del>	_		-	POLYMERIZATION	WILL NOT OCCUR X	
CONDITIO	NS TO AVOID	Presen	ce of cart	oixono monoxic	de during melting	
INCOMPA	FIBILITY (Material to A	Avoid)	I	(Dust and fu	ıme) acetylene, chlor	ine
HAZARDO	US DECOMPOSITION	PRODUCTS	8		Copper fume, tin	fume

#### **SECTION X - PHYSICAL DATA**

MELTING POINT 1900° F	VAPOR PRESSURE N/A	VOLATILES	N/A
BOILING POINT No data	SOLUBILITY IN WATER Insoluble	EVAPORATION RATE	N/A
SPECIFIC GRAVITY (H2O * 1)	pH N/A	VAPOR DENSITY (Air * 1)	N/A
* DENSITY .321 pounds/in <sup>3</sup>			

INFORMATION FURNISHED BY:

Environmental Hygiene

and Toxicology (203) 789-5436

DATE

March 19, 1986

Department of Environmental Hygiene and Toxicology (203) 789-5436

Olin CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904

OCEAN® Network

EMERGENCY PHONE 1-800-OLIN-911

1051

### SECTION I - IDENTIFICATION

CHEMICAL NAME & SYNONYME 598 A		
CHEMICAL FAMILY Copper	FORMULA Mixture	TRADE NAME Alloy 510
DESCRIPTION Metal		CAS NO. Not assigned/mixture

#### **SECTION II - NORMAL HANDLING PROCEDURES**

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Precautions needed for abrasive, melting or other operations generating a dust or fume. Do not get dust or fume in eyes, on skin or on clothing. Do not take internally. Wash thoroughly with soap and water before eating or smoking. Avoid breathing dust or fumes.

PROTECTIVE EQUIPMENT		VENTILATION REQUIREMENTS	
Eyes Gloves Other	Goggles Impervious NIOSH/MSHA approved high efficiency particulate respirator if excessive dusting/fumes occur	As required to keep airborne concentrations below TLV for copper and tin.	

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL	OSHA Pel	LD 50	LC 50	SIGNIFICANT EFFECTS
Copper	Dust 1 mg/m <sup>3</sup>	TD <sub>LO</sub> = 120 ug/kg (human)	No data	Dust or fume: metal fume fever, respiratory irritation
Tin	Fume 0.1 mg/m <sup>3</sup> Dust 2 mg/m <sup>3</sup>	í	No data	Mucous membrane irritation, accumulation of dust in lung

## SECTION IV - FIRE AND EXPLOSION HAZARD DATA (pneumoconiosis)

FLASH POINT	OSHA CLASSIFICATION		FLAMMABLE	LOWER	UPPER	
METHOD	Not applicable	Non-con	EXPLOSIVE	N/A	N/A	
	e extinguishing m		urrounding materia			
	AZARD & FIRE FIGHTI		Use NIOSH/MS			ssure
sel	f-contain <b>e</b> d breat	hing apparatus wh	en any material is:	involved in a fir	e.	

#### **SECTION V - HEALTH HAZARD DATA**

THRESHOL	None established for mixture (copper fume 0.2 mg/m <sup>3</sup> , tin 2 mg/m <sup>3</sup> ACGIH :	1985-86).
SYMPTOMS	OF OVER EXPOSURE  Dust and fume - sneezing, congestion, metallic taste, nausea	
SKIN	Dust or fume: Wash with EMERGENCY FIRST-AID PROCEDURES soap and water before eating or smoking. If an irritation develops, call a physical state of the state of	sician.
EYES	Dust or fume: Flush with water for 15 minutes. Call a physician.	
INGESTION	Dust: Not a likely route of exposure. If ingested, call a physician.	
INHALATIC	Dust or Fume: Remove victim to fresh air. Call a physician.	

TRW-01874

#### **SECTION VI - TOXICOLOGY (Product)**

ACUTE ORAL LD 50	No data for alloy	CARCINOGENICITY MUTAGENICITY	Not carcinogenic by oral, dermal or inhalation routes Not known to be mutagenic Dust is irritating
ACUTE DERMAL LD 50	No data for alloy	EYE IRRITATION	Dust is irritating
ACUTE INHALATION LC 50	No data for alloy	PRIMARY SKIN IRRITA	Dust may be an irritant
PRINCIPAL ROUTES OF ABSO	RPTION		
Inhalation of dust	or fume		
EFFECTS OF ACUTE EXPOSUE Skin, eye and muc	ous membrane irritatio	on, respiratory irri	tation, metal fume fever
EFFECTS OF CHRONIC EXPO	sure None expected	under proper indu	strial handling conditions. Chronic

#### **SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)**

#### **ACTION FOR MATERIAL RELEASE OR SPILL**

Dust or Fume: Wear NIOSH/MSHA approved high efficiency particulate respirator. Follow OSHA regulations for respirator use (See 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an appropriate container. Wash all contaminated clothing before reuse.

In the event of a large spill, use the emergency telephone number shown on the front of this sheet.

#### TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

#### WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

#### **SECTION VIII - SHIPPING DATA**

D.O.T. CLASS	Not regulated	
--------------	---------------	--

#### SECTION IX - REACTIVITY DATA

STABLE X UNSTABLE	AT °C	Op.	HAZARDOUS	MAY OCCUR
	<del></del>	POLYMERIZATION	WILL NOT OCCUR X	
CONDITIONS TO AVOID	Presence of car	rbon monoxide di	iring melting	
	• -			
INCOMPATIBILITY (Material to	Avoid) (dust and	i fume) acetylen	e, chlorine	
l		_	_	
HAZARDOUS DECOMPOSITIO	N-PRODUCTS	<u>copper fume, tin</u>	fume	

#### **SECTION X - PHYSICAL DATA**

MELTING POINT 1750°F	VAPOR PRESSURE N/A	VOLATILES N	/A
BOILING POINT No data	SOLUBILITY IN WATER Insoluble	EVAPORATION RATE N	/A
SPECIFIC GRAVITY (H2O - 1)	pH N/A	VAPOR DENSITY (Air = 1) N	/A
* DENSITY .320 lbs./in <sup>3</sup>			

INFORMATION FURNISHED BY:

Environmental Hygiene

and Toxicology (203) 789-5436 DATE N

March 27, 1986

Department of Environmental Hygiene and Toxicology (203) 789-5436

Olin CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904
OCEAN® Network
EMERGENCY PHONE 1-800-OLIN-911



#### **EMERGENCY PHONE (203) 356-2345**

Olin Corporation, 120 Long Ridge Road

AMMABILITY
0 REACTIVITY
$\langle 2 \times 0 \rangle$
HEALTH HAZARD RATING
SPECIAL

# MATERIAL SAFETY DATA

The corporation, 120 Long Muge Moad	
tamford, Conn. 06904	SECTION I - IDENTIFICATION

Phosphor Bronze			
CHEMICAL FAMILY	FORMULA	TRADE NAME	
Copper		Alloy 511	
DESCRIPTION		CAS NO.	<del></del>
Metal			

#### SECTION II - NORMAL HANDLING PROCEDURES

000111	NO IN THORMAL TIAMBERTO I ROCEBORES				
Avoid breathing dust or fumes. Do not take internally.					
	CORROSIVE ACTION ON MATERIALS (Metals, Plastic, Rubber, Etc.)				
PROTECTIVE EQUIPMENT	VENTILATION REQUIREMENTS				
Eves Dust - goggles Gloves Other	As required to keep airborne concentrations of copper dust below TLV.				

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL	APPROX.	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Copper		Dust 1 mg Fume 0.1	/m <sup>3</sup> mg/m <sup>3</sup>		Gastro-intestinal
Tin		Dust 2 mg			Mucous membrane irritation

#### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT NOT	OSHA CLASSIFICATION	FLAMMABLE	LOWER	UPPER
METHOD Applicable		EXPLOSIVE		
EXTINGUISHING MEDIA				
Not Applicable		•	•	
SPECIAL FIRE HAZARO & FIRE	FIGHTING PROCEDURES			
Not Applicable				

#### **SECTION V - HEALTH HAZARD DATA**

THRESHOLD LI	None established.
SYMPTOMS OF	Dust and fume - sneezing, congestion, metallic taste, gastro-intestinal distress, chills, fever
	EMERGENCY FIRST-AID PROCEDURES
SKIN	Flush thoroughly with water.
EYES	Flush with water for 15 minutes, call a physician.
INGESTION	Drink water, induce vomiting by sticking finger down throat, call a physician.
INHALATION	Remove victim to fresh air, call a physician.

## CHEMICAL NAME

SECTION VI - TOXICOLOGY (Product)

CUTE ORAL LD SE

GUTE DERMAL LD 80

(human)

EVE IMPRITATION Dust is irritating

CARCINGGENIC Not known to be carcinogenic

ACUTE ORAL TDLO Copper 120 mg/kgNot known metalenic

PRIMARY SKIN IRRITATION

Dust is

AGUTE INHALATION LC 10

irritating

WAL ROUTES OF ASSORPTION

Inhalation of dust or fume

EFFECTS OF ACUTE EXPOSURE

Congestion, gastro-intestinal distress, chills, fever, dermatitis

May cause liver, kidney or spleen damage, anemia, dermatitis

#### SECTION VII - SPILL OR LEAKAGE PROCEDURES (Control Procedures)

Dust or Tume - Wear NIOSH/MSHA approved dust and fume respirator. Follow OSHA regulations for respirator use. (See 29 CFR 1910.134). Shovel or sweep up and place in an approved DOT container and seal. Wash all contaminated clothing before reuse.

Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

#### SECTION VIII - REACTIVITY DATA

HAZAROOUS MAY OCCUR X UNITABLE **OLYMENIZATION** WILL NOT OCCUR X CONDITIONS TO AVOID

Dust and fume - acetylene, chlorine

Copper fume ZAROGUE DECOMPOSITION PRODUCTS

SECTION IX - PHYSICAL DATA

MELTING POINT 1785°F	VAPOR PRESSURE		VOLATILES	
SOILING FOINT	SOLUBILITY IN WATER	Insoluble	EVAPORATION RATE	
SPECIFIC GRAVITY(H <sub>2</sub> 0 =1)	git		VAPOR CENSITY(Ab - 1)	
DRNSITY .320 pounds/	m <sup>3</sup>			

INFORMATION FURNISHED BY:

A. L. Gaudreau (203) 789-5434

DATE

September 4, 1984

Department of Environmental Hygiene and Toxicology

CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904 **EMERGENCY PHONE (203) 356 · 2345** 

TRW-01877

#### **SECTION I - IDENTIFICATION**

Phosphoe Program 896		
CHEMICAL FAMILY	FORMULA	TRADE NAME
Copper	Mixturé	Alloy 521
DESCRIPTION		CAS NO.
Metal		Not assigned/mixture

#### **SECTION II - NORMAL HANDLING PROCEDURES**

#### PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Precautions needed for abrasive, melting or other operations generating a dust or fume. Do not get dust or fume in eyes, on skin or on clothing. Do not take internally. Wash thoroughly with soap and water before eating or smoking. Avoid breathing dust or fumes.

PROTECTIVE EQUIPMENT		VENTILATION REQUIREMENTS
Eyes Gloves Other	Goggles Impervious NIOSH/MSHA approved high efficiency particulate respirator if excessive dusting/fumes occur	As required to keep airborne concentrations below TLV for copper and tin.

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL	OSHA Pel	LD 50	LC 50	SIGNIFICANT EFFECTS
Copper	Dust 1 mg/m <sup>3</sup> Fume 0.1 mg/m <sup>3</sup>	TD <sub>LO</sub> = 120 ug/kg (human)	No data	Inhalation - metal fume fever, respiratory tract irritation
Tin	Dust 2 mg/m <sup>3</sup>	No data	No data	Mucous membrane irritation, accumulation of dust in lung

#### **SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT		OSHA CLASSIFICATION		PLAMMABLE	LOWER	UPPER
METHOO Not applicable		Non-com	EXPLOSIVE	N/A	N/A	
EXTINGUISHI	NG MEDIA					
} <b>U</b> :	se extinguishing m	edia suitable for su	rrounding materials.			
SPECIAL FIRE	HAZARD & FIRE FIGHTI	NG PROCEDURES	Use NIOSH/MSHA	approved po	sitive pres	sure
se	if-contained breat	hing apparatus whe	n any material is invo	lved in a fir	e.	
		a de la companya de l			<del></del>	

#### **SECTION V - HEALTH HAZARD DATA**

THRESHOL	None established for mixture (copper fume 0.2 mg/m <sup>3</sup> , tin 2 mg/m <sup>3</sup> ACGIH 1985-86).
SYMPTOMS	OF OVER EXPOSURE  Dust and fume - sneezing, congestion, metallic taste, nausea, chills, fever
SKIN _	Dust or fume: Wash with EMERGENCY FIRST-AID PROCEDURES soap and water before eating or smoking. If an irritation develops, call a physician.
EYES	Dust or fume: Flush thoroughly with water for 15 minutes. Call a physician.
INGESTION	Dust: Not a likely route of exposure. If ingested, call a physician.
INHALATIC	Dust or Fume: Remove victim to fresh air. Call a physician.

TRW-01878

#### SECTION VI - TOXICOLOGY (Product)

ACUTE ORAL LD 50	No data for alloy	CARCINOGENICITY	Not carcinogenic by oral, dermal or inhalation routes
ACUTE DERMAL LD 50	No data for alloy	MUTAGENICITY EYE IRRITATION	Not known to be mutagenic Dust is irritating
		PRIMARY SKIN IRRIT	Don't man be indeed
ACUTE INHALATION LC 50	No data for alloy		
PRINCIPAL ROUTES OF ASSO	RPTION		
Inhalation of dust			
EFFECTS OF ACUTE EXPOSU	RE		
Skin, eye and muc	ous membrane irritatio	on, respiratory irrit	tation, metal fume fever
EFFECTS OF CHRONIC EXPO	SURE None expected	under proper indu	strial handling conditions. Chronic mulation of dust in lungs.

#### SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)

#### ACTION FOR MATERIAL RELEASE OR SPILL

Dust or Fume: Wear NIOSH/MSHA approved high efficiency particulate respirator. Follow OSHA regulations for respirator use (See 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an appropriate container. Wash all contaminated clothing before reuse.

In the event of a large spill, use the emergency telephone number shown on the front of this sheet.

#### TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

#### WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

#### SECTION VIII - SHIPPING DATA

D.O.T. CLASS	Not regulated

#### **SECTION IX - REACTIVITY DATA**

STABLE X UNSTABLE		AT °C °F		HAZARDOUS	MAY OCCUR	
}			POLYMERIZATION	POLYMERIZATION	WILL NOT OCCUR X	
CONDITION	S TO AVOID	Presence	e of carb	on monoxid	le during melting	
INCOMPATI	BILITY (Material to	Avoid) (d	lust and	(ume) acet	ylene, chlorine	
HAZARDOU:	S DECOMPOSITIO	N PRODUCTS	e e	pper fume	tin fume	

#### **SECTION X - PHYSICAL DATA**

MELTING POINT 1620°F	VAPOR PRESSURE N/A	VOLATILES	N/A
BOILING POINT No data	SOLUBILITY IN WATER Insoluble	EVAPORATION RATE	N/A
SPECIFIC GRAVITY (H2O - 1)	PH N/A	VAPOR DENSITY (Air = 1)	N/A
*DENSITY .318 lbs/in <sup>3</sup>			

INFORMATION FURNISHED BY:

Environmental Hygiene

DATE

March 18, 1986

and Toxicology Department

(203) 789-5436

Department of Environmental Hygiene and Toxicology (203) 789-5436

TI CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904 OCEAN® Network **EMERGENCY PHONE 1-800-OLIN-911** 



7664

38 2

NFPA Designation 704

DEGREE OF HAZARD

4 = EXTREME 3 = HIGH 2 - MODERATE 1 = SLIGHT 0 = INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS:

(4792-793-1234 NEWARKA 6A

(913) 749-810@ LAWRENCE KS (261) 541-4171 CARTERET NJ:

CHENTREC:

:.

(800m 424-9300\*TRANSPURTATION

MEDICAL: (3032 S\$5 9046 ROCKY NTN

FLAMMABILITY
(RED)

HEALTH
(BLUE)

SPECIAL
HAZARD

REVISION: 05	EFFECTIVE: 07/21/89	PRINTED: 09/25/89
PREPARED FOR USE 8Y	HAMPDEN COLOR & CHEMICAL 126 MEMORIAL GRIVE SPRINGFIELD MA	
	IDENTIFICATION =======	9/49
INFORMATION PROVIDED BY:	FMC CORPORATION 2000 MARKET STREET PHILADELPHIA PA 19103	Mg 1
	PRODUCT INFORMATION ====	************
SYNONYMS	ORTHOPHOSPHORIC ACID, MO PHOSPHORIC ACID PHOSPHORIC ACID	NOPHOSPHORIC ACID
FORMULA	H3PO4 PHOSPHATE	
PRODUCT USES	ALUMINUM BRIGHTENERS AND LEATHER TANNING, VARNISH	METAL PHOSPHATIZING
	BOILER WATER TREATMENT, DRINKS, YEAST NUTRIENT,	The state of the s
*****************	PRECAUTIONARY INFORMATIO	And the second of the second o
PRECAUTIONARY STATEMENT: (PLEASE USE THIS STATEMENT	LIQUID IS CORROSIVE TO E	
TO SATISFY THE IN-PLANTS LABELING REQUIREMENTS OF THE OSHA HAZARD	PRODUCES IRRITATION TO ELUNGS.	TES, NOSE, THRUAT AND
COMMUNICATIONS STANDARD \$ 29 CFR 1910.1200)	?P <b>MYSIUAU</b> S <sup>^</sup> NO×BIGÑIFICANT	*HĀŽĀROS ING BORRAT BORN IN TO
	FIRST AID!	AT LEAST 15 MINUTES.
1 110 per 1034   Kendalist		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)

PAGE 11

7664

38 2

NFPA Designation 704

PHOSPHORIC ACID (70-85%)

DEGREE OF HAZARD

4 EXTREME
3 HIGH
2 MODERATE
1 SLIGHT
0 INSIGNFICANT

EMERGENCY TELEPHONES:

PLANTS: (4

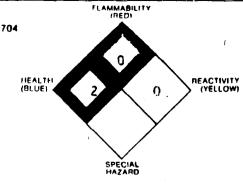
(415) 793-1231 NEWARK, CA

(913) 749-8100 LAWRENCE, KS.

(201) 541-4171 CARTERET, NJ

CHEMTREC: (800) 424-9300 TRANSPORTATION

MEDICAL: (303) 595-9048 ROCKY MTN



REVISION: 05	EFFECTIVE: 07/21/89	PRINTED: 09/23/8
	= INGREDIENTS =========	
414H AND COMPONENT	HATTERIAL AS COMPONENTS D	
CASH AND COMPONENT	: MATERIAL OR COMPONENT: P PERCENT : 7	
	CAS# : 7	464-38-2
	MATERIAL OR COMPONENT: W	
	PERCENT : B	
CANADIAN PRODUCT		
IDENTIFICATION NUMBER	.:  1805	
	PHYSICAL DATA	
	PHISTORE DAIR TOTAL	` .
MELTING/FREEZING POINT	= -17.5C FOR 75%, +21C FOR	85%
BOILING POINT	2 130-158C	•
VAPOR PRESSURE	: 130-158C : 8-2 MM HG # 25*C (WATER) : NON-VOLATILE	* * *
VAPOR DENSITY (AIR = 1)	: NON-VOLATILE	
ROOM TEMPERATURE	CLEAR, COLORLESS LIQUID	1
DOR	NONE	The state of the s
SPECIFIC GRAVITY (H/N =1)		
SOLUBILITY IN H20 X BY WI X VOLATILES BY VOLUME	: INFINITE	
VOLATILES BY VOLUME	S NON-VOLATILE 4/95	
EVAPORATION RATE	. NON-VOLATILE - 15 3 89 WAR	
PH (AS IS)	SINGNT OLATICE TO SUMME WAR	(····································
PH (1% SQLUTION)	1.7 · · · · · · · · · · · · · · · · · · ·	
DDOR THRESHOLD	: NOT APPLICABLE	
DENSITY (GMS/MLX	.:!:1.3-1.7 DEPENDING ON CON	CENTRATION: '
COEFF. WATER/ OIL DIST	. NOT AVAILABLE	
	FIRE, EXPLOSION AND REAC	•
	: NON COMBUSTIBLE	
NUTOIGNITION TEMPERATURE. Flammable Limits Upper		
	NOT APPLICABLE	
EXTINGUISHING MEDIA		
SPECIAL FIREFIGHTING	: USE FULL PROTECTIVE CLOT	HING AND SELF-CONTAINE
PROCEDURES	BREATHING APPARATUS. TH	ERMAL DECOMPOSITION
	EMITS TOXIC FUMES OF OXI	DES OF PHOSPHORUS.
		PAGE 02



PLANTS:

7664

38 2

PHOSPHORIC ACID (70-85%)

NFPA Designation 704

DEGREE OF HAZARD

4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNFICANT

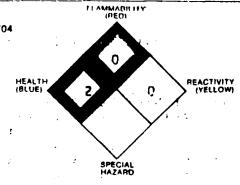
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(303) 595-9048 ROCKY MTN MEDICAL:



REVISION: 05	EFFECTIVE: 07/21/87	PRINTED:	09/25/89
	FIRE> EXPLOSION AND R	EACTIVITY DATA ===	3 2 2 2 2 2 <b>2</b> 2
DEGREE OF FIRE AND EXPLOSION HALARD	NONE		
EXPLOSION HAZARD STABILITY	STABLE		
HAZARDOUS POLYMERIZATION .:	WILL NOT OCCUR		
CONDITIONS TO AVOID:		MATERIALS, REACTI	VE METAL
MAJOR CONTAMINANTS THAT	NONE		
CONTRIBUTE TO INSTABILITY			
INCOMPATIBLE TY	CONTACT WITH REACTIVE AND ALUMINUM) MAY PRO		
	HYDROGEN - AIR MIXTUR STRONG BASES.		
	PHOSPHORUS OXIDE FUME	S. (24 14) TOXIC	,
SENSITIVITY TO MECH:		THE CANADA TO THE CANADA AND AND AND AND AND AND AND AND AN	•
SENSITIVITY TO STATIC: DISCHARGE	NONE	3	
******************			
EYE CONTACT	SEVERE IRRITANT; CHEM SOURCE: RTECS	ICAE BURN-LIKELY.	(1) [4] [4] [4] [5] [4] [5] [6] [7]
	DATE: 1980	٠.	14 77 1
SKIN CONTACT	NON-IRRITATING (RABBI	Τ)	
क्षात्र १४ व व व व <b>३ तम्</b> स्टूर्ण स्टूर	REFERENCES FMC STUDY	188-1050	
SKIN ABSORPTION			
icada In H	COMPER RIFCS		
	DATE: 1980	5. 4.1.1.mans 400 mm	1.1.00.4.
INHALATION	SEVERE IRRITANT - TCL	U (HUMAN): TUU MIL	LIGKAMS
INGESTION	PEN-CUBIC METERS	NED COATS - 1520 M	;;   707  G/YG
INGESTION	COMPCE'S STEERS	USU TRAIL = 1530 M	IGANO
3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DATE: 1980		
n na na na h	વ્યુવસ્થ કાર્યો માટે છે		
	rang an Agent Andrews		
·	gram again on a house in	n et soude about the source	, range (t
• [	****		

PAGE U3

PLANTS:

7664

38 2

PHOSPHORIC ACID (70-85%)

EMERGENCY TELEPHONES:

NFPA Designation 704

DEGREE OF HAZARD

4 = EXTREME 3 = HIGH 2 = MODERATE 1 = SLIGHT 0 = INSIGNFICANT

(913) 749-8100 LAWRENCE, KS (201) 541-4171 CARTERET NJ

CHEMTREC: (800) 424-9300 TRANSPORTATION

(415) 793-1231 NEWARK, CA

(303) 595-9048 ROCKY MTN MEDICAL:

FLAMMABILITY (RED) 0 REACTIVITY (YELLOW) Û

REVISION: 05	EFFECTIVE: 07/21/89 PRINTED: 09/25/8
***************	EXPOSURE LIMITS THE EXPOSURE LIMITS
	TLV = 1 MG/CU.M
	SOURCE: ACGIH DATE: 1984-85 PEL = 1 MG/CU. M
	SOURCE: OSHA DATE: 1974 STEL = 3 MG/CU.M
•	SOURCE: OSHA DATE: 1989
	EFFECTS OF OVEREXPOSURE ====================================
ACUTE EXPOSURE	.: IRRITANT, SLIGHTLY TOXIC WHEN INHALED OR INGESTED.
CHRONIC EXPOSURE	.: SLIGHTLY TOXIC WITH REPEATED INHALATION OR
	INGESTION: CAUSES BURNS TO EXPOSED TISSUE.
INCLUDE: SENSITIVITIES,	
CARCINOGENICIT TERATOGENICITY	· I
MUTAGENICITY,	
SYNERGISTIC	
PRODUCTS AND	A THE SERVICE STREET STREET
ANY MEDICAL CONDITIONS	
GENERALLY RECOGNIZED, AS	the state of the s
BEING AGGRAVATED BY EXPOSURE.)	
EXPOSORE.	The second of th
	== EMERGENCY AND FIRST AID PROCEDURES ========
EYES	FLUSH WITH COPIOUS WATER FOR AT LEAST 15
	MINUTES. IF IRRITATION PERSISTS, OBTAIN MEDIC
CKIN	AFTENTION.  WASH OFF WITH WATER. IF IRRITATION PERSISTS,
3 N L 17 G + + + + + + + + + + + + + + + + + +	OBTAIN MEDICAL ATTENTION.
INHALATICH	REMOVE FROM EXPOSURE. IF BREATHING IS DIFFICE
	OR DISCOMFORT PERSISTS, OSTAIN MEDICAL
	ATTENTION.
INGESTION	: RINSE MOUTH WITH WATER; GIVE COPIOUS WATER TO CAUSE DILUTION IN STOMACH. DO NOT CAUSE
	VOMITING.
DECONTAMINATION PROCEDUR	E: WASH WITH COPIOUS WATER.
	PAGE 04

PLANTS:

CHEMTREC:

7664

38 2

NFPA Designation 704

PHOSPHORIC ACID (70-85%)

NOTES TO PHYSICIAN .....

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CONTRACTOR OF GUILLING

AFTER UNE CASING.

STRINGERS STEIN FOR

STATNEESS ASS NOT RESONT

O De POTEMPILA COCOCETA \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

THYLENE, 51.0 FAP 150F. N.

STATESFACT 19. CONTRACTOR

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**EMERGENCY TELEPHONES:** 

DEGREE OF HAZARD

4 - EXTREME 3 - HIGH 2 - MODERATE 1 - SLIGHT 0 - INSIGNFICANT

(201) 541-4171 CARTERET' NJ (800) 424-9300 TRANSPORTATION

(415) 793-1231 NEWARK, CA

(913) 749-8100 LAWRENCE: KS

MEDICAL: (3C3) 595-9048 ROCKY MTN

FLAMMABILITY (RED) ŋ REACTIVITY HEALTH (BLUE) 2 O SPECIAL HAZARD

REVISION: 05 **EFFECTIVE: 07/21/89** PRINTED: 09/25/89

EMERBENCY AND FIRST AID PROCEDURES ====

MODERATELY CORROSIVE AGENT-WHICH MAY BURN

ANY EXPOSED TISSUES UPON OTHER THAN VERY BRIEF CONTACT. EYES, SKIN AND MUCOUS MEMBRANES SHOULD BE FLUSHED THOROUGHLY WITH WATER, AND CPHTHALMOLOGIC CONSULTATION SHOULD BE OBTAINED FOR ANY CORNEAL BURNS. IN CASES OF INGESTION, IMMEDIATE DILUTION WITH WATER> MICK OR DEMULCENTS IS WORTHWHILE, BUT ATTEMPTS TO NEUTRALIZE WITH A BASE SHOULD 95 AVOIDED BECAUSE OF EXCESSIVE GAS AND HEAT FORMATION, WHICH MAY INCREASE THE THREAT OF ESOPHAGOGASTRIC PERFORATION. VOMITING AND ADIARRHEAD CLAXATIVE EFFECT OF PHOSPHATES) ARE

EXPECTED WITH EARGE DOSES. nya 13345-499 kan 1873 na Warrenteral Pluid Administration may beineeded 216 LOSSES THEREFROM ARE SEVERE, OR IF SHOCK PENSUES: SUPPERFIVE CARE MAY BE NEEDED FOR 43:36 - 4:402 USUCH OTHER COMPLICATIONS AS GLOTTAL EDEMA. ASAC TOSTYOU GIOA CINVHENATENESIS AND PERFORATION (UNLIKELY). INDUCE

VONITING SHOULD BE AVOIDED BECAUSE LOCAL TISSUE OINJURY MAY BE AGGRAVATED, BUT THE PATIENT "SHOULD?BE-WAT CHED! FOR HYPERPHOSPHATEMIA AND -HYPOCALCEMIA: MILK OR OTHER DEMULCENTS MAY BE

WORTHWHILE FORMBASTRIC IRRITATION.

SPECIAL PROTECTION ======= MAIRIED

- 912 (3 17) 名字でんす **(9枚) マ**カヨビ さ PVENTILATION ONLY REQUIRED IN CASE OF MIST VENTILATION REQUIREMENTS.: CONDITIONS. 943740233 - KINAMP 0 UMBOR

7.19 PROTECT SYES AND SWEN FROM CONTACT. RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

: ######Respiratorvall.ip. Jafforfsevere mist füse nicht misht fäht "a cid "Gäs" " RESPIRATOR WITH FULL FACE PIECE OR IN SEVERE EXPOSURE USE SELF-CONTAINED BREATHING

APPARATUS. TRY: MARKETAGAI

DIAN CAR STATE AND

PAGE US

7664

38 2

NFPA Designation 704

PHOSPHORIC ACID (70-85%)

DEGREE OF HAZARD

4 - EXTREME

HIGH MODERATE SLIGHT INSIGNFICANT

EMERGENCY TELEPHONES:

(415) 793-1231 NEWARK, CA

(913) 749-8100 LAWRENCE, KS

(201) 541-4171 CARTERET, NJ

FEAMMABILITY C HEALTH (BLUE) REACTIVITY (YELLOW) C.

CHEMTREC:	(800)	424-930	TRANSPORTATION	SPECIAL
MEDICAL:	(303)	595-904	ROCKY MTN	
REVISION: 0	5		EFFECTIVE: 07/21/89	PRINTED: 09/25/85
				·
********			SPECIAL PROTECTION =======	****************
EYES			WEAR CHEMICAL GOGGLES, IF S	PLASHING, SPRAY
		+ 1	OR MIST CONDITIONS ARE POSS	IBLE.
GLOV	ES	• • • • • • •	RUBBER, NEOPRENE OR OTHER R	ESISTANT ELASTOMER
SPEC	IAL CL	OTHING	WHERE CONTACT IS LIKELY, RU	BUER APRON AND BOOTS
		IPMENT		
FOOT	WEAR	• • • • • • •	USE: RUBBER BOOTS IN SPILL S	ITUATIONS.
*******	*****		STORAGE AND HANDLING =====	**************
/DI EACE 11CC	THIC	CTATEMEN	USE GOGGLES AND/OR FACE SHI	ELAC BURDER ADRONE.
TO SATISTY	-		GLOVES AND BOOTS WHERE SPLA	
			CONTACT IS EXPECTED. FOR E	
OF THE CSH				
COMMUNICAT			FULL FACEPIECE.	5 RESPIRATOR WITH
29CFR 1910			WHEN UNLOADING BULK VEHICLE	S. PERSONNEL SHOULD
		•	WEAR CHEMICAL GOGGLES AND R	HRRED OR MEDPRENE
•			GLOVES. ALL FIFTINGS SHOUL	D SE PROPERI Y SECUR
•			PRIOR-TO ENERGIZING UNLOADI	NG SYSTEM. CARE
,			SHOULD BE TAKEN TO AVOID AC	ID CONTACT WHEN DIS-
			CONNECTING LINES/HOSES AFTE	R HNI DADING FOR
7		) [4 25]	BULK STORAGE TYPE 316L STAI	NLESS STEEL IS RECOR
: *	· -	198 · 61	HENDED- GLASSA POLYETHYLEN	F. AND FRP (DEPENDIN
		yuang	ON RESIN USED) ARE ALSO SAT	ISFACTORY. STEEL
•		n (43 mi). 	ALUNINUM AND TYPE 304 STAIN	
	, -	********	MENDED BECAUSE OF RAPID OR	
		******	MERCEL & CHOM & BE MENTER AN	

PROCEDURE FOR RELEASE....: OR SPILL WASTE DISPOSAL METHOD..

. Ep. 1801 (

DIKE AND SALVAGE OR NEUTRALIZE. AND LIME ARE NEUTRALIZING AGENTS. IF MATERIAL CAN NOT BE SALVAGED, A METHOD IS NEUTRALIZATION FOLLOWED BY DISCHARGE INTO A TREATMENT SYSTEM IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

EDA MAY BE USED TO PREVENTE FREEZING. A. . . . . . . RECOMMEND DIKED AREA AROUND STORAGE TANK WITH SUFFICIENT VOLUME TO HOLD ENTIRE TANK! CONTENTS

PAGE U6

DISPOSAL, SPILL OR LEAK PROCEDURES

REACTIVITY (YELLOW)

**MATERIAL SAFETY DATA** 

. . . .

7664

38 2

NFPA Designation 704

PHOSPHORIC ACID (70-85%)

DEGREE OF HAZARD

- EXTREME - HIGH - MODERATE - SLIGHT - INSIGNFICANT

**EMERGENCY TELEPHONES:** 

PLANTS:

(415) 793-1231 NEWARK, CA

(913) 749-8100 LAWRENCE, KS

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CHEMTREC:

(800) 424-9300 TRANSPORTATION

(303) 595-9048 ROCKY MTN MEDICAL:

HAZARD

HEALTH

FLAMMABILITY (RED)

0

0

REVISION: 05 **EFFECTIVE: 07/21/89** PRINTED: 09/25/89 TRANSPORTATION DATA ===== DOT PROPER SHIPPING NAME .: PHOSPHORIC ACID DOT CLASSIFICATION .... CORROSIVE MATERIAL DOT LABELS.... CORROSIVE DOT MARKING ... PHOSPHORIC ACID UN 1805 CORROSIVE UN 1805 HAZARDOUS SUBSTANCE/RQ...: 5000 LBS. (227C KG) 49 STCC NUMBER.... 4930248 EMERGENCY ACCIDENT PRECAUTIONS AND PROCEDURE: FLUSH WITH LARGE AMOUNTS OF WATER. RECAUTIONS TO BE TAKEN ...: PROTECT AGAINST PHYSICAL DAMAGE IN TRANSPORTATION TYPE PACKAGES..... BULK ACID TRUCKS OR RAILCARS; DRUMS OTHER SHIPPING IDS.... NONE ADDITIONAL REGULATORY INFORMATION ======= MATERIAL IS REPORTED IN EPA TSCA INVENTORY LIST? YES MATERIAL IS LISTED AS A CARCINOGEN/POTENTIAL CARCINOGEN IN FOLLOWING NTP ANNUAL REPORT ... ? NO IARC GROUP I OR II ... ?! OSHA 29CFR PART 1910 SUBPART Z ? NO ACGIH APPENDIX A .... NO FDA GRAS LIST; PERMITTED IN FCOD. USDA PERMITTED IN MEATS. CONTAINS UP TO 100 PPM ARSENIC, 2 PPM CADMIUM AND 7 PPM LEAD FROM CALIFORNIA'S "PROPOSITION 65" LISTS OF CARCINOGENS AND REPRODUCTIVE TOXINS. DOES PRODUCT CONTAIN A TOXIC CHEMICAL(S) SUBJECT TO SARA TITLE III SECTION 13 REPORTING.... YES CHEMICAL (S). PHOSPHORIC ACID (THIS PRODUCT) PAGE O7



PLANTS:

7664

38 2

NFPA Designation 704

PHOSPHORIC ACID (70-85%)

EMERGENCY TELEPHONES:

DEGREE OF HAZARD

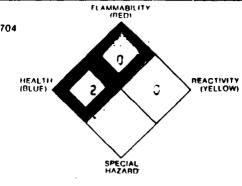
4 EXTREME
3 HIGH
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CHEMTREC:

(303) 595-9048 ROCKY MTN MEDICAL:



REVISION: 05	EFFECTIVE: 07/21/89	PRINTED: 09/25/89
***************************************	ADDITIONAL REGULATORY IN	FORMATION ========
SARA TITLE III SECTION 311/312 CLASSIFICATION:	MSDS REQUIRED; INVENTORY	REPORTING REQUIRED.
		***
<b>3</b> .	production (1994) ¥ Company of the State o	
	and the second s	
र प्राप्त का <del>वि</del> कास कर सुरक्षा के स्वर्थ के क्षेत्र के किस्स्वर के किस्स्वर के किस्स्वर के किस्स्वर के किस्स्वर	178,1507 C 177,138 W	ಕ ೧೯೮೩ ವಿವರ್ಞ ೧೯೩೩
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		30 - 100 - 1

PAGE 118

#### BETZ LABORATORIES, INC. 4636 SOMERTON ROAD, TREVOSE, PA. 19047 BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 1-800-877-1940

(PAGE 1 OF 3)

REAGENT : PHOSVERS 3: PONDER: PILLOWS CODE 2304

EFFECTIVE DATE 02-16-91

MASS. REG.#

PRINTED: 01-31-92

REVISIONS TO SECTIONS: -; EDIT: APPENDIX

REAGENT APPLICATION : FIELD TEST REAGENT

----SECTION 1------HAZARDOUS INGREDIENTS-------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC REAGENT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. FOR MASSACHUSETTS, THE PERCENT OF HAZARDOUS INGREDIENT IN THE FORMULATION IS INDICATED BELOW.

DISULFURIC ACID, DIPOTASSIUM SALT\*\*\*(POTASSIUM HYDROGEN SULFATE, FUSED); CAS#7790-62-7; CORROSIVE; PEL: NONE; TLV: NONE.

SODIUM MOLYBDATE\*\*\*(MOLYBDIC ACID, DISODIUM SALT)\*\*\*CAS#7631-95-0; POSSIBLE RESPIRATORY IRRITANT; PEL: 5MG/M3(AS MO); TLV: 5MG/M3(AS MO); ( 2.0-5.0% )

----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: 5% SOL.

(APPROX.) 1,5 ODOR: NONE

FL.PT.(DEG.F): NA

SP.GR.(70F)OR DENSITY: 2.17

VAPOR PRESSURE(mmHG): NA

VAPOR DENSITY(AIR=1): NA

%SOLUBILITY(WATER): 100

VISC cps70F: NA

APPEARANCE: WHITE

EVAP.RATE: NA WATER=1

FREEZE POINT(DEG.F): NA

PHYSICAL STATE: POWDER

----SECTION 3-----REACTIVITY DATA----

STABLE, BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

#### MATERIAL SAFETY DATA SHEET (PAGE 2 OF 3)

REAGENT: PHOSVER 3 POWDER PILLOWS

----SECTION 4-----HEALTH HAZARD EFFECTS-----

ACUTE SKIN EFFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

MODERATELY IRRITATING. MAY BE CORROSIVE IN CONTACT WITH MOIST SKIN.

ACUTE EYE EFFECTS \*\*\*

CORROSIVE TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

DUSTS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE \*\*\*

PROLONGED OR REPEATED CONTACT MAY CAUSE TISSUE NECROSIS.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

#### SYMPTOMS OF EXPOSURE \*\*\*

INHALATION OF DUSTS MAY CAUSE IRRITATION AND/OR BURNS TO RESPIRATORY TRACT; SKIN CONTACT CAN CAUSE MODERATE IRRITATION TO BURNS (DEPENDENT ON LENGTH OF EXPOSURE).

----SECTION 5-----FIRST AID INSTRUCTIONS-----

SKIN CONTACT\*\*\*

REMOVE CLOTHING. WASH AREA WITH LARGE AMOUNTS OF SOAP SOLUTION OR WATER FOR 15 MIN. IMMEDIATELY CONTACT PHYSICIAN

EYE CONTACT\*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA.APPLY NECESSARY FIRST AID TREATMENT.IMMEDIATELY CONTACT A PHYSICIAN.

INGESTION\*\*\*

GENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM SPECIFIC- DO NOT INDUCE VOMITING.IMMED.CONTACT PHYSICIAN.DILUTE CONTENTS OF STOMACH USING 3-4 GLASSES MILK OR WATER

----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----SPILL INSTRUCTIONS\*\*\*

GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. SWEEP UP AND PLACE IN WASTE DISPOSAL CONTAINER.

SPECIFIC- SPILL RESIDUE MAY BE NEUTRALIZED WITH SODA ASH DISPOSAL INSTRUCTIONS\*\*\*

GENERAL-WATER CONTAMINATED WITH THIS REAGENT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

REAGENT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE), PROPER FIRE EXTINGUISHING MEDIA:
DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

#### MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

REAGENT: PHOSVER 3 POWDER PILLOWS

ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS RECOMMENDED RESPIRATORY PROTECTION\*\*\*

IF VENTILATION IS INADEQUATE OR SIGNIFICANT REAGENT EXPOSURE IS LIKELY, USE A RESPIRATOR WITH DUST/MIST FILTERS.

RECOMMENDED SKIN PROTECTION\*\*\*

GAUNTLET-TYPE RUBBER GLOVES, CHEMICAL RESISTANT APRON WASH OFF AFTER EACH USE REPLACE AS NECESSARY

RECOMMENDED EYE PROTECTION\*\*\*
AIRTIGHT CHEMICAL GOGGLES

----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----

STORAGE INSTRUCTIONS\*\*\*

KEEP CONTAINER CLOSED WHEN NOT IN USE.

KEEP DRY

HANDLING INSTRUCTIONS\*\*\*

CORROSIVE TO MOIST SKIN. CORROSIVE TO EYES.

APPENDIX: REGULATORY INFORMATION

THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT.

...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY ...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT:

NOT APPLICABLE

...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE

...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE

... CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE

... SARA SECTION 302 CHEMICALS: NONE

... SARA SECTION 313 CHEMICALS: NONE

...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

NFPA/HMIS : HEALTH - 3 ; FIRE - 0 ; REACTIVITY - 0 ; SPECIAL - CORR ; PE - C

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## **MATERIAL SAFETY DATA SHEET**

	Sac	tion I	· · · · · · · · · · · · · · · · · · ·		07858
Identity	Date Prepare		786	Date Revised	12/0//00
PHTHALG BLUS	NEPA CODE HEALTH			FLAMMABILITY	: 1 REACTIVITY: 1
Section II	— Haz	ardous	Ingre	dients	
Hazardous Ingredients	С	AS#	Hea	alth Hazards	ACGIH TLV - TWA
PROPYLENE GLYCOL	107-9	8-2			360 MG/CUM
NO COMPONENT WAS FOUND TO BE	CARCIN	DGENIC	IN NI	P, IARC OR	OSHA 1910(Z)
Section little in	gel cal	Chemic	al Ch	eracteristic	
Boiling Point	3.01.2.1	Specific Grav	rity (H2O =	•	
369 DEG F Vapor Pressure (mm Hg)		D	4:1 -	0. 98	
NOT DETERMINED		Percent Volati By Volume (%		75. 0	
Vapor Density (AIR = Reference)  HEAVIER		Evaporation I (Ether = Refe		SL.OW	ER
Water Soluble ND					
Appearance and Odoe		<u> </u>			
BLUE LIQUID, MILD ODOR		7 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ar en en en en en	Control of the Contro	
Section (4.5)	<b>Tyand</b>	Explosi	on Ha		
Flash Point (Method Used)		L.	mmable L		LEL UEL
214 DEG F TCC				VALVE	2. 6
Extinguishing Media CARBON DIOXI	DE. DR	Y CHEMI	CAL.		
	EXPOS	ED TO F	EAT,	PRESSURE	WILL BUILD UP IN
CONTAINER. Unusual Fire and Explosion Hazards	A C	TRATOUT	LIATE	P STPFAM	WOULD SPREAD
FIRES. STATIC ELECTRICITY COU					MOAFA DUKEUR

#### MATERIAL SAFETY DATA SHEET

PHTHALO BLUE

07858

Section V — Reactivity Data:

STABILITY

Unstable

Conditions to Avoid

Stable

AVOID PROLONGED STORAGE AT ELEVATED TEMPERATURES

INCOMPATIBILITY (Materials to Avoid)

. 1

NONE KNOWN

Hazardous Decomposition Products

00, 005

HAZARDOUS POLYMERIZATION May Occur

Conditions to Avoid

Will Not Occur \* NONE

Section VI — Health Hazard Data

Effects of Overexposure

MILD SKIN IRRITANT. HARMFUL IF SWALLOWED.

IRRITATING TO THE EYES. INHALATION MAY CAUSE HEADACHE, NAUSEA, AND DIZZINESS.

**Emergency and First Aid Procedures** 

Eye (Contact):

FLUSH EYES WITH COPIOUS AMOUNTS OF WATER FOR 15 MINUTES

AND CONTACT PHYSICIAN IMMEDIATELY.

Skin (Contact):

WASH WITH SOAP AND WATER. CONTACT PHYSICIAN IF

IRRITATION PERSISTS.

Ingestion (Swallowing):

DRINK LARGE QUANTITIES OF MILK OR WATER.

CONSULT

PHYSICIAN IMMEDIATELY.

Inhalation (Breathing):

REMOVE TO FRESH AIR.

### Section VII — Precautions for Safe Handling & Use

Steps to be taken in Case Material is Released or Spilled

CONTAIN SPILL. ABSORB AND DISPOSE WASTE.

Waste Disposal Method:

DISPOSE IN ACCORDANCE WITH LOCAL, STATE AND

FEDERAL REGULATIONS.

Precautions To be Taken in Handling and Storage DO NOT STORE OR USE NEAR HEAT, SPARKS, OR FLAME. DO NOT STORE NEAR COMBUSTIBLE MATERIAL. DO NOT STORE IN DIRECT SUNLIGHT. WHEN SANDING DRY FILM, USE NIOSH APPROVED DUST MASK. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE.

Other Precautions:

SHOWERS AND EYE WASH FOUNTAINS SHOULD BE MADE

AVAILABLE WHERE CHEMICALS ARE USED.

# Control Measures

Respiratory Protection (Specify Type)

USE NIOSH APPROVED EQUIPMENT WHEN AIRBORNE EXPOSURE LIMITS ARE EXCEPDED.

Ventilation

Local

RECOMMENDED TO MAINTAIN BELOW TLV

Mechanical Protective Gloves

Eye Protection

NEOPRENE RUBBER

SPLASH GOGGLES OR FACE SHIELD

Other Protective Clothing or Equipment

PROTECTIVE CLOTHING SUFFICIENT TO PREVENT SKIN CONTACT.

Work/Hygienic Practices

WASH THOROUGHLY BEFORE EATING, SMOKING OR USING TOILET FACILITIES.

THE INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE AND IS ACCURATE TO THE BEST OF SELLER'S KNOWLEDGE, HOWEVER, SELLER MAKES NO WARRANTY WHATSOEVER, EXPRESSED, IMPLIED OR OF MERCHANTABILITY REGARDING THE ACCURACY OF SUCH DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, SELLER ASSUMES NO RESPONSIBILITY FOR INJURY TO BUYER OR TO THIRD PERSONS OR FOR ANY DAMAGE TO ANY PROPERTY AND BUYER ASSUMES ALL SUCH RISK.

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Page 2 of 2

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# **MATERIAL SAFETY DATA SHEET**

	Sec	tion I		0785
Identity	Date Prepare	02/21/8	Date Revised	12/09/85
PHTHALO GREEN	NFPA CODE HEALTH:		FLAMMABILITY:	1 REACTIVITY: 1
Section	on II — Haza	ardous Ing	redients	
Hazardous Ingredients	CA	AS#	Health Hazards	ACGIH TLV - TWA
PROPYLENE GLYCOL	107-98	8-2		360 MG/CUM
NO COMPONENT WAS FOUND TO	BE CARCIN	DGENIC IN	NTP, IARC OR	OSHA 1910(Z)
Section IIF	- Physical/	Chemicat (	Haracteriste	
Boiling Point		Specific Gravity (H	2O = 1)	
369 DEQ F Vapor Pressure (mm Hg)		Percent Volatile	1.06	
NOT DETERMI	l l	By Volume (%)	71	
Vapor Density (AIR = Reference) <b>HEAVIER</b>	;	Evaporation Rate (Ether = Reference	) SL.OWE	:p
Water Soluble		(56.	, OL.OWL	
NO Appearance and Odor				
GREEN LIQUID, MILD ODOR				
Section IV	Elegand	Explosion		
Flash Point (Method Used)			ole Limits	LEL UEL
214 DEG F TCC			T VALUE	2. 6
Extinguishing Media CARBON D	IOXIDE. DR'	Y CHEMICAL	-•	
Special Fire Fighting Procedures	IF EXPOSI	ED TO HEAT	, PRESSURE W	ILL BUILD UP I
CONTAINER.				
Unusual Fire and Explosion Hazards FIRES. STATIC ELECTRICITY			TER STREAM V	OULD SPREAD
FIRED. SIMIL ELECTRICITY	COOLD CAO	OF IGHTIII	J17.	_

TRW-01893

		Section	on V — Rea	ctivity Data		
STABILITY	Unstable	Conditions				
INCOMPATIBILIT	Stable #	AVOID	PROLONGED	STORAGE A	T ELEVATED	TEMPERATURES.
NONE KNOW				<u> </u>		
OXIDES OF	•					
HAZARDOUS POLYMERIZATION	May Oc		Conditions to Av	void		
		Section '	VI — Healt	h Hazard Da	ata	
Effects of Overex	posure	MILD	SKIN IRR	ITANT. HAR	MFUL IF SWA	L LOWED.
IRRITATIN DIZZINESS	NG TO THE EYE 3.	S. INHAL	ATION MAY	CAUSE HEA	DACHE, NAUS	EA, AND
Emergency and I	First Aid Procedures		17711 00010	-	OC (14700 -	00 18 474
	FLUS FACT PHYSICIA			US AMOUNTS	UF WATER F	OR 15 MINUTES
Skin (Contact):				TER. CONTA	CT PHYSICIA	N IF
IRRITATIO	N PERSISTS.					
Ingestion (Swallo	owing): DRIN	K LARGE	QUANTITIE	S OF MILK	DR WATER.	CONSULT
	I IMMEDIATELY					
Inhalation (Breath	ning): <b>REMO</b>	VE TO FR	RESH AIR.			
	Section	VII — Pre	ecautions fo	or Safe Han	dling & Use	
Steps to be taker	n in Case Material is Rele	ased or Spilled				
CONTAIN	SPILL. ABSO	RB AND D	)ISPOSE WA	STE.		
Waste Disposal		DISPOSE	IN ACCORD	ANCE WITH	LOCAL, STAT	E AND
	REGULATIONS.  De Taken in Handling and	Storage DO	NOT STORE	OR USE NE	AR HEAT, SP	ARKS, OR
	NOT STORE N					
SUNLIGHT.	WHEN SANDIN	G DRY FI	LM, USE N	IOSH APPRO	VED DUST MA	SK. KEEP
CONTAINER	TIGHTLY CLO	SED WHEN	NOT IN U	SE.		
Other Precaution	s: SHOW	FRS AND	EVE WASH	FOUNTAINS	SHOULD BE M	ADF
	WHERE CHEMI					
		Section	VIII — Con	troi Measu		
	ection (Specify Type)					
	I APPROVED EG					ARE EXCEEDED.
	Local	RECO	IMMENDED T	D MAINTAIN	BELOW TLV	
Ventilation	Mechanical					
	9		) Fue	Protection		
Ventilation  Protective Glove  NEOPRENE			*	Protection  LASH QUGGLI	ES OR FACE	SHIELD

Work/Hygienic Practices
WASH THOROUGHLY BEFORE EATING, SMOKING OR USING TOILET FACILITIES.

THE INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE AND IS ACCURATE TO THE BEST OF SELLER'S KNOWLEDGE, HOWEVER, SELLER MAKES NO WARRANTY WHATSOEVER, EXPRESSED, IMPLIED OR OF MERCHANTABILITY REGARDING THE ACCURACY OF SUCH DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF, SELLER ASSUMES NO RESPONSIBILITY FOR INJURY TO BUYER OR TO THIRD PERSONS OR FOR ANY DAMAGE TO ANY PROPERTY AND BUYER ASSUMES ALL SUCH RISK.

Codes 60, 61, 62 - PIPE JOINT CEMENT

General: For joining threaded pipe of iron, steel or brass. Lubricates threads, provides a tight seal, long lasting. Remains soft in use, so pipes can be disjointed easily, if the need occurs. Used in system carrying hot or cold water, low or high pressure steam.

Packaging:

Code 60 - 12-5 plat BRUSH TOP cans per case

Code 61 - 12-1 pint cans per case Code 62 - 12-1 quart cans per case

NOTE: We have confirmed the suitability of this product for the uses described above only, when applied according to the directions on the label. We do not assume responsibility for results obtained from other uses or failure to follow the directions.

#### Technical:

Composition
Color
Lead content
% Non-Volatile

Boiled linseed oil/Inert filler Gray
None
99 + %



Dec. '79

RECEIVED
JUN 15 1984
MACC

42.

# **Material Safety Data Sheet**

# Devcon

CHEMICAL FAMILY

DEVCON CORPORATION/30 ENDICOTT STREET/DANVERS. MASSACHUSETTS 01923/(817) 777-1100

PLASTIC STEEL LIQUID (B) - RESIN

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind expressed or implied is made to the information contained herein.

**SECTION 1 · IDENTITY AND EMERGENCY INFORMATION** 

Filled Epoxy Resin

SECTION 2 · HAZARDOUS INGREDIENTS
INGREDIENTS

medical attention.

H HEAL	тн	
F FLAM	IMABILITY	
R REAC	TIVITY	0

TELEPHONE NO. (617) 777-1100

**DEVCON SAFETY DEPT (617) 777-1100** 

EMERGENCY

OTHER INFORMATION CALLS:

NATURE OF HAZARD

ein HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

CAS NUMBER

OTHER PRODUCT INFORMATION The following health hazard data pertain to the resin only. I mixed with the hardener, uncured material should be handled in accordance with the precautions recommended on the hardener Material Safety Data Sheet.

		1								
Bisphenol A	Diglycidyl	Ether R	esin	25068-3	8–6	30- 60	Moderate sk	cin sen	siti	izer
			·							
SECTION 3 - P	HYSICAL DA	TA		<u></u>						
BOILING POINT (F.)		a		ISITY (AIR = 1)	>1		EVAPORATIO (BuAc = 1)		n.	.a.
MELTING POINT IF	n.	a.	SPECIFIC G	PAVITY	2.8	8	SOLUBILITY II	N WATER	Ni	il
VAPOR PRESSURE <b>@ 78°F</b>	(mm Hg.) <b>Ní</b>	.1	PERCENT V BY VOLUME		0	pH (5 wt. % ii		n H2O) 7.0		.0
APPEARANCE AND		ırk gray	paste, l	ow odor.						
SECTION 4 - F	RE AND EX	LOSION	HAZARD D	ATA				<b></b>		· <u>.                                    </u>
FLASH POINT (F.) (N	•	- 	•~~1	FL	AMMABL	E LIMIT	S IN AIR	LEL	-	UEL
EXTINGUISHING M	FOIA	00°F (PM						n.a.		n.a.
	CU <sub>2</sub>	<del></del>	hemicals	. Polymer	r foan	ns for	r large fire	<u></u>		
SPECIAL FIRE FIGH	TING PROCEDUI	RES								
Firefighters	should we	ar self-	containe	d breathir	ng app	parati	s and prote	ctive	clot	hing.
UNUSUAL FIRE ANI	··									
SECTION 5 - H	EALTH HAZA	RD DATA	<del></del>							·
EMERGENCY AND	FIRST AID PRO	CEDURES							<del></del>	
EYES: F1	ush with w	ater for	15 minut	tes. Get	medic	zal at	tention.			
skin: Wa	sh with so	ap and wa	arm wate	r. Get med	lical	atter	ntion if irr	itatio	n de	velops.
INGESTION: DO	not induc	e vomiti	ng. Admii	nister two	o glas	ses o	of water. Ge	et medi	cal	advice.
INHALATION: Re	move to from	esh air.	Adminis	ster oxyge	en if	breat	thing is dif	ficult	. G	<b>e</b> t

#### SECTION 5 - HEALTH HAZARD DATA (Continued)

	· · · · · · · · · · · · · · · · · · ·											
THRESHOLD	IMIT VALUE	ORAL LD 50 EPOXY	(RAT);	DERMAL LDE EDOXY RE	O(RABBIT);	INHAL	ATIO	N LC SO	(RAT)			
Not estab	olished	11,49/	kd	>20g/kg	Nic	deaths	Ϋ́Υ, '	Resid	d air	for	8	hr
ROUTE OF EXP	POSURE			E	FFECTS OF OV							
ACUTE:												
EYES:	Mild irrita	ation										
SKIN:	Mild irrita	ation										
INHALATION:	No data											
CHRONIC:	Moderate sk	kin sensit	izer									
CARCINOGEN	ICITY.	NTP? No	ACGIH?	IARC N	AONOGRAPHS No	37	ОЗН	A REGU	JLATED?	,		
MEDICAL CON GENERALLY A	IDITIONS GGRAVATED BY EX	(POSURE A	llergy,	eczema, sk	in condit	ion						
SECTION 6	- REACTIVITY	DATA										
STABILITY	UNSTABLE	CONDITION	IS TO AVOID									

STABILITY	UNSTABLE		CONDITI	CONDITIONS TO AVOID Open flame and excessive heat.					
	STABLE	х	Open						
INCOMPATIBILITY	INCOMPATIBILITY (Materials to Avoid) Strong oxidizing agents and strong acids								
HAZARDOUS DEC				n, aldehydes and acids from incomplete combustion.					
HAZARDOUS	MAY O	MAY OCCUR		MAY OCCUR		MAY OCCUR CONDITIONS TO AVOID		CONDITIONS TO AVOID	
POLYMERIZATION WILL NOT OC		occi	JR X	Heat is generated when mixed with epoxy hardener. Use caution when mixing large quantities.					

#### **SECTION 7 - SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Prevent skin and eye contact. Scrape up and discard in suitable containers. Use absorbent material if necessary. Wash spill area with an industrial cleaning agent. If a solvent is used for cleaning, take precautions against fire and personal overexposure.

WASTE DISPOSAL METHOD

Remove to a waste disposal facility operating in compliance with state and local regulations.

#### **SECTION 8 - SPECIAL PROTECTION INFORMATION**

EYES	Safety glasses with side shields.
SKIN:	Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.
INHALATION:	None required at normal handling temperatures.
VENTILATION:	Local exhaust is recommended for confined areas. General ventilation is adequate for normal use.

#### SECTION 9 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING, STORING, ETC.

Store in a cool, dry place.

Handle in accordance with the potential hazard of the curing agent used. Remove contaminated clothing and protective gear. Launder or clean before re-use. Destroy leather articles, including shoes that cannot be decontaminated. Wash thoroughly after using, particularly before eating or smoking. If cured material is sanded or machined, use proper precautions. Wear adequate protective equipment to prevent overexposure to nuisance particulates.

D.O.T. PROPER SHIPPING NAME Non-regulated	REVISED
	### 100c
D.O.T. HAZARD CLASS (IF APPLICABLE)	<b>■:</b> JULY 1986

# **Material Safety Data Sheet**

H	HEALTH	
F	FLAMMABILITY	1
R	REACTIVITY	0

The information is discommendated							HEACH	VII Y	<u>ت</u>
However, no Gourantee of worranty contained need of	or an, kind expressed	a of implied is mi	ace to the informa	31101	. н	AZARDOUS MATE	RIAL IDENT	FICAT	ION SYSTE
SECTION 1 - IDENTIT	Y AND EMERG	ENCY INFO	ORMATION			·- ·			
TRADE NAME PLASTI	C STEEL PUT	<b>ry (a)</b> – 1	RESIN				ERGENCY EPHONE N	0. (61	7) 777-110
	Epoxy Resir					DEVCON S		T (61	7) 777-110
OTHER PRODUCTINE DRMATI mixed with the har precautions recomm	ion The following the dener, uncur ended on the	owing he ed mater hardene	alth hazai ial should r Materia	d dat I be l Safe	a pe andle ty D	rtain to the ed in accordance ata Sheet	e resin dance w	onl ith	y. When the
SECTION 2 - HAZARD			<del>,</del>		·	<u>,                                     </u>			
INGRI	EDIENTS	·	CAS NUME	BER	30	NAT	URE OF HA	ZARD	
Bisphenol A Digly	cidyl Ether	Resin	25068–3	38-6	10- 30	Moderate s	kin sen	siti	zer
							-		
		-							
							<del></del>		
SECTION 3 - PHYSICA	AL DATA		<u> </u>		<u></u>	<del></del>			
BOILING POINTIE	n.a.	VAPOR DEN	ISITY (AIR = 1)	>1		EVAPORATIO	N RATE	n.	a.
MELTING POINT (F)		SPECIFIC G	RAVITY			SOLUBILITY	N WATER	7	
	n.a.	<b></b>		2.	8			Ni	1
VAPOR PRESSURE (mm Hg) @ 78°F	Nil	PERCENT V		0		pH (5 wt. % in	H2O)	7.	0
APPEARANCE AND ODOR	Dark gray pa	ste; low	odor.						
SECTION 4 - FIRE AN	DEXPLOSION	HAZARD D	ATA						
FLASH POINT (F) (Method Us	•		FL	AMMABI	LE LIMIT	TS IN AIR	LEL		UEL
	>400°F (	PMCC)					n.a.		n.a.
EXTINGUISHING MEDIA C	0 <sub>2</sub> or dry ch	emicals.	Polymer	foams	for	large fire	5		
SPECIAL FIRE FIGHTING PRO Firefighters should		contained	d breathin	ng app	aratı	us and prote	ective (	clot	hing.
UNUSUAL FIRE AND EXPLOS	SION HAZARDS								
SECTION 5 - HEALTH	HAZARD DATA	\		<del></del>	<del></del>				•

EMERGENCY	AND FIRST AID PROCEDURES
EYES.	Flush with water for 15 minutes. Get medical attention.
SKIN	Wash with soap and warm water. Get medical attention if irritation develops.
INGESTION	Do not induce vomiting. Administer two glasses of water. Get medical advice.
INHALATION	Remove to fresh air. Administer oxygen if breathing is difficult. Get medical attention.

#### SECTION 5 - HEALTH HAZARD DATA (Continued)

CHRONIC:  CARCINOGENI  MEDICAL CON	CITY	NTP?	ACGIH? No	IARC MONOGRAPHS		ATED?	
CHRONIC:	Possible	sensitiza	icion riam pro				]
			tion from pro	olonged or repeat	ted skin contact.		1
INHALATION.	No data						
SKIN	Mild irri	tati <b>on</b>					
EYES:	Mild irri	tation					
ACUTE:							1
ROUTE OF EXP	POSURE			EFFECTS OF OV	EREXPOSURE		ı
	olished		resin g/kg	Epoxy rěšin >20g/kg Na	Epoxy residuates in sat'd	air for 8	ho
Not estab			50(RAT); [	ERMAL LD 50(RABBIT):	Errous velkin	n .	

STABILITY	UNSTABLE		CONDIT	IONS TO AVOID
	STABLE	х	Open .	flame and excessive heat.
INCOMPATIBILITY	(Materials to	o Avoid)	Stro	ng oxidizing agents and strong acids
HAZARDOUS DEC	OMPOSITIO	N PRO	DUCTS	carbon, aldehydes and acids from incomplete combustion.
HAZARDOUS POLYMERIZATION	MAY O			CONDITIONS TO AVOID  Heat is generated when mixed with epoxy hardener. Use
	WILL NO	r occu	IR X	caution when mixing large quantities.

#### **SECTION 7 - SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Prevent skin and eye contact. Scrape up and discard in suitable containers. Use absorbent material if necessary. Wash spill area with an industrial cleaning agent. If a solvent is used for cleaning take precautions against fire and personal overexposure.

WASTE DISPOSAL METHOD

Remove to a waste disposal facility operating in compliance with state and local

#### SECTION 8 - SPECIAL PROTECTION INFORMATION

EYES.	Safety glasses with side shields
SKIN:	Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.
INHALATION:	
	None required at normal handling temperatures.
VENTILATION:	Local exhaust is recommended for confined areas. General ventilation is adequate for normal use.

#### **SECTION 9 - SPECIAL PRECAUTIONS**

PRECAUTIONS TO BE TAKEN IN HANDLING, STORING, ETC.

Store in a cool, dry place.

Handle in accordance with the potential hazard of the curing agent used. Remove contaminated clothing and protective gear. Launder or clean before re-use. Destroy leather articles, including shoes that cannot be decontaminated. Wash thoroughly after using, particularly before eating or smoking. If cured material is sanded or machined, use proper precautions. Wear adequate protective equipment to prevent overexposure to nuisance particulates.

TRW-01899

D.O.T. PROPER SHIPPING NAME	Non-regulated		REVISED
D.O.T. HAZARD CLASS (IF APPLICA	ABLE)	DATE:	JULY 1986

# **Material Safety Data Sheet**

# Devcon

DEVCON CORPORATION/30 ENDICOTT STREET/DANVERS, MASSACHUSETTS 01923/(617) 777-1100

The information and recommendations contained herein are based upon data believed to be correct. However, no quarantee or warranty of any kind expressed or implied is made to the information contained herein.

H HEALTH	3
F FLAMMABILITY	
R REACTIVITY	0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

# SECTION 1 - IDENTITY AND EMERGENCY INFORMATION TRADE NAME PUTTY HARDENER 0200 CHEMICAL FAMILY Polyamines and Modified Polyamines OTHER PRODUCT INFORMATION The following health hazard data pertain to the hardener only. When fully cured, the mixed product is non-hazardous.

**SECTION 2 - HAZARDOUS INGREDIENTS** 

INGREDIENTS	CAS NUMBER	90	NATURE OF HAZARD
Triethylenetetramine (TETA)	112-24-3	30 <u>–</u> 60	Severe skin and eye irritant respiratory irritant; skin
			sensitizer.
		30-	<del> </del>
Polyamide Resin	12624-35-0	60	Severe eye irritant
		10-	
Modified Aminoethyl Piperazine	70776-30-6	30	Skin and eye irritant
			1
	İ	1	

#### SECTION 3 - PHYSICAL DATA

BOILING POINT (F.)	>450	VAPOR DENSITY (AIR = 1)	>1	EVAPORATION RATE (BuAc = 1)	<1
MELTING POINT (F)		SPECIFIC GRAVITY		SOLUBILITY IN WATER	
	n.a.		0.98		Appreciable
VAPOR PRESSURE (mm Hg.)  @ 20°C	K0.01	PERCENT VOLATILE BY VOLUME (%)	0	pH (5 wt. % in H2O)	10–11
APPEARANCE AND ODOR					
	Straw cold	ored gel; mild ammonia	a like od	lor.	

#### SECTION 4 · FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (F.) (Method Used)	FLAMMABLE LIMITS IN AIR	LEL	UEL
>200°F (TCC)		n.a.	n.a.
EXTINGUISHING MEDIA CO2, dry chemical or wa	ater spray.		
SPECIAL FIRE FIGHTING PROCEDURES  Firefighters should wear self-contained clothing.	breathing apparatus and pr	cotective	
UNUSUAL FIRE AND EXPLOSION HAZARDS			
None			

#### SECTION 5 - HEALTH HAZARD DATA

EMERGENCY A	ND FIRST AID PROCEDURES
EYES:	Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative.
SKIN:	Immediately remove any contaminated clothing and wash thoroughly with
INGESTION:	soap and warm water.  Corrosive. Do not induce vomiting. Give large amounts of water or milk and transport to a medical facility.
INHALATION:	Remove to fresh air. Contact a physician if symptoms persist.

#### SECTION 5 · HEALTH HAZARD DATA (Continued)

Not established TETA 2500mg/kg TETA 820mg/kg ROUTE OF EXPOSURE EFFECTS OF OWN ACUTE:  EYES: Severe irritation or burns.  SKIN: Severe irritation or burns, possible allergic response in the property irritation, possible allergic response.	-
ACUTE:  EYES: Severe irritation or burns.  SKIN: Severe irritation or burns, possible allergic responsible allergi	-
EYES: Severe irritation or burns.  SKIN: Severe irritation or burns, possible allergic responsible allergic respon	esponse.
SKIN: Severe irritation or burns, possible allergic responsible Respiratory irritation, possible allergic responsible allergic responsi	esponse.
INHALATION: Respiratory irritation, possible allergic respon	esponse.
	•
	nse.
CHRONIC: Possible sensitization from repeated skin contact	ct.
CARCINOGENICITY: NTP? ACGIH? IARC MONOGRAPHS NO NO NO	57 OSHA REGULATED?

STABILITY	UNSTABLE		CONDITIONS TO AVOID					
	STABLE	Х	Expos	ure to open flame or excessive heat.				
INCOMPATIBILITY (Materials to Avoid) Strong exidizing agents, acids and chlorinated organic compounds								
HAZARDOUS DEC	OMPOSITIO			Oxides of nitrogen, carbon and ammonia.				
HAZARDOUS POLYMERIZATION	CONDITIONS TO AVOID  Heat is generated when mixed with epoxy resin. Use							
	WILL NOT	occu	JR X	caution when mixing large quantities.				

#### **SECTION 7 - SPILL OR LEAK PROCEDURES**

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Prevent skin and eye contact. Remove contaminated clothing. Discard contaminated leather articles such as shoes and belts. Absorb spillage on inert material and discard in suitable containers.

WASTE DISPOSAL METHOD

Remove to a waste disposal facility operating in compliance with state and local regulations.

#### **SECTION 8 - SPECIAL PROTECTION INFORMATION**

EYES.	Safety glasses with side shields or splash proof goggles					
SKIN:	Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.					
INHALATION:	None needed in normal use with proper ventilation. In poorly ventilated are use NIOSH approved organic vapor masks.					
VENTILATION:	Local exhaust is recommended for prolonged or repeated use. Effective mechanical ventilation is adequate for occasional use.					

#### SECTION 9 - SPECIAL PRECAUTIONS

#### PRECAUTIONS TO BE TAKEN IN HANDLING, STORING, ETC.

Prolonged or repeated overexposure may cause sensitization and allergic response. Persons so effected should consult a physician. If sensitization is confirmed, avoid further exposure to material.

Keep hands away from eyes when handling material or before washing after use. Wash thoroughly after using, particularly before eating or smoking.

Store in a cool, dry place.

D.O.T. PROPER SHIPPING NAME Corrosive Liquid, N.O.S.		REVISED
Corrosive Material IN # 1760	ATE: _	JULY 1986



705 North Mountain Road Newington, Connecticut 06111 Telephone: (203) 278-1280 Telex: 99348

## MATERIAL SAFETY DATA SHEET

I.	PRODUCT IDENTIFICATION	
	Product Name PIPE SEALANT W/TEFLON	Part No. 592
	Product Type Anaerobic	Formula No.
II.	COMPOSITION	•
		y Wt. <u>Hazard</u>
	Polyglycol Dimethacrylates 10	
	Bis-Phenol A Fumarate Resin 25	
		-20
		-15
		-15
		-10
		-3 -3
		-3 -2
		. The state of th
	mental animals when injected under the	oxide caused tumors in one of thirty experi- skin. **Pure titanium dioxide has been shown
	to cause tumors in experimental animal	s when injected into the muscles. ***Inhala-
	tion of pure silicon dioxide dust has	been snown to cause pulmonary effects.
	when implanted beneath the cking In 1	shown to cause tumors in experimental animals ight of the low concentration of these compo-
	nents in the product it is our best t	echnical judgment that normal use of this
		arnings are present only to comply with OSHA
	regulations.	arrings are present only to comply with oshin
		en e
III.	CHEMICAL AND PHYSICAL PROPERTIES	
	Vanor Procesure / 10 mm at 900E	Sacrific Consults 1 21 at 000F
	Vapor Pressure < 10 mm at 80°F Vapor Density Unknown	Specific Gravity 1.21 at 80°F
	Solubility in Water Slight	Boiling Point > 300°F
	Appearance White paste	Odor Alcoholic
	Appearance wirre paste	Oddi Alconolic
IV.	TOXICITY AND HEALTH HAZARD DATA	Angli pangangangan
	Toxicity	
	Est. Oral LD 50 >5000 mg/kg	TLV Unknown (1-Octanol)
	Est. Dermal LD 50 >2000 mg/kg	
	Symptoms of Overexposure Intoxication,	nausea, headache, dizziness. May cause
	dermatitis on prolonged contact in sens	itive individuals.
	Emergency Treatment Procedures	
	Ingestion: Do not induce vomiting. Kee	p individual calm. Obtain medical attention.
	Innalation: Remove individual to fresh	air. If symptoms persist, obtain medical atter
	Skin Contact: Flush with water.	
	Eye Contact: Flush with water.	
	Personal Protection	
	Eyes: Safety glasses recommended.	
	Skin: Rubber or plastic gloves recommended.	andad
	Ventilation: Local ventilation recomme	nded for prolonged use TRW-01902

#### PIPE SEALANT W/TEFLON

٧.	PLANEMADILITY AND EXPLUSIVE PROPERITES
	Flash point > 200°F Method TCC
	EXDIOSIVE LIMITS (% DV VOIUME IN AIR) LOWER dna % iUDDER dna %
	Recommended Extinguishing Agents CO2, Foam, Dry Chemical Hazardous Products Formed by Fire or Thermal Decomposition: Toxic Fluorides
	Hazardous Products Formed by Fire or Thermal Decomposition: Toxic Fluorides
	Unusual Fire or Explosion Hazards: None
	Compressed Gasses Name None  Pressure at Room Temperature
	rressure at Room Temperature
VI.	REACTIVITY DATA
	Stability [X] Stable [] Unstable Hazardous Polymerization [] May Occur [X] Will Not Occur Hazardous Decomposition Products (non-thermal) None
	Incompatibility None
VII.	SPILL OR LEAK AND DISPOSAL PROCEDURES
	Steps to be taken in case of spill or leak: Soak up in an inert absorbent. Store in partly filled, closed container until disposal.
	Recommended methods of disposal: Bury or incinerate in accordance with EPA and local regulations.
	Tocar regulacions.
VIII.	STORAGE AND HANDLING PROCEDURES
	Storage: Store below 110°F to preserve shelf life.
	Handling: Avoid prolonged skin contact. Do not use for prolonged periods in
	confined area without adequate ventilation.
IX.	SHIPPING REGULATIONS
	Type or Class DOT Unrestricted
	IATA Unrestricted
	TATA OILLES CLITCLES
_	
	red By: Martin Hauser
	Vice President - En Fronmental Health and Safety
Date:	November 1, 1985



705 North Mountain Road Newington, Connecticut 06111 Telephone: (203) 278-1280 Telex: 99348

## MATERIAL SAFETY DATA SHEET

I .	Product Name GASKET ELIMINATOR 51		
	Product Type Anaerobic		ula No.
II.	COMPOSITION		
	<u>Ingredients</u>	% by Wt.	<u>Hazard</u>
	Polyurethane Methacrylate Resins Polyglycol Dimethacrylates Acrylic Acid***** Silicon Dioxide**** Cumene Hydroperoxide* Saccharin** Acetylphenylhydrazine***	70-75 10-15 5-7 4-5 3-4 <2 <1	See Section IV.
	mental animals when injected under tumors in experimental animals whe ***Acetylphenylhydrazine has been fed in large amounts for prolonge dust has been shown to cause pulm shown to cause reproductive effect peritoneal cavity in high doses.	r the skin. ** en fed in large shown to cause d periods. *** onary effects. ts in experimen In light of the	e tumors in experimental animals when **Inhalation of pure silicon dioxide
III.	CHEMICAL AND PHYSICAL PROPERTIES		
	Vapor Pressure < 10 mm at 80°F Vapor Density Unknown Solubility in Water Slight Appearance Purple Gel	Boili pH	fic Gravity <u>1.1 at 80°F</u> ng Point > 300°F dna Sharp, Irritating
IV.	TOXICITY AND HEALTH HAZARD DATA		
	Toxicity Skin and eye irritant.  Oral LD50 >5000 mg/kg  Dermal LD50 >2000 mg/kg  Symptoms of Overexposure May cau	TLV se dermatitis	
	individuals.		•
	Emergency Treatment Procedures Ingestion: Do not induce vomiting. Inhalation: Does not apply. Skin Contact: Flush thoroughly wi Eye Contact: Flush at least 15 m	th water.	
	Personal Protection Eyes: <u>Safety glasses or goggles</u> Skin: <u>Rubber or plastic gloves</u> .		
	Ventilation: Not normally necess	ary	

SASKET	ELIMINATOR® 515 SEALANT
٧.	FLAMMABILITY AND EXPLOSIVE PROPERTIES
	Flash point > 200°F
	Unusual Fire or Explosion Hazards: None
	Compressed Gasses Name None Pressure at Room Temperature
VI.	REACTIVITY DATA
• •	Stability [X] Stable [] Unstable Hazardous Polymerization [] May Occur [X] Will Not Occur Hazardous Decomposition Products (non-thermal) None
	Incompatibility None
VII.	SPILL OR LEAK AND DISPOSAL PROCEDURES
	Steps to be taken in case of spill or leak: <u>Soak up in an inert absorbent</u> . <u>Store in partly filled</u> , closed container until disposal.
	Recommended methods of disposal: <u>Bury or incinerate in accordance with EPA and local regulations.</u>
VIII.	STORAGE AND HANDLING PROCEDURES
	Storage: Store below 110°F to preserve shelf-life. Handling: Avoid prolonged skin contact. Keep away from eyes.
IX.	SHIPPING REGULATIONS
	Type or Class DOT Unrestricted IATA Unrestricted
	red By: Martin Hauser
Title: Date:	: Vice President - Ervironmental Health and Safety November 1, 1985
vale:	MOACHINGS, T 200

#### MATERIAL SAFETY DATA SHEET

#### FOR COATINGS, RESINS AND RELATED MATERIALS

DATE OF PREPARATION 5/01/92

PAGE 1

MANUFACTURER'S NAME : MORTON CONTINGS INC.

ADDRESS : CHICOPEE FACILITY

ADDRESS :

40 HAYNES CIRCLE

CITY.STATE :

CHICOPEE, MA 01020

EMERGENCY TELEPHONE NO. DAY: 413-592-4191 NIGHT: 800-424-9300

INFORMATION TELEPHONE NO. DAY: 413-592-4191 NIGHT: 800-424-9300

SECTION I PRODUCT IDENTIFICATION

Manufacturer's Code Identification: X7754 Revision: 01

Product Class: PLASTISUE

Trade Name: GREY CHEM-0-SOL

HMIS Information Health- f\* Flammability- f

Reactivity- 0 Personal Protective Equipment-

SECTION II HAZARDOUS INGREDIENTS

VAPOR PRESSURE ---- INGREDIENT ----% BY Sara MATERIAL DESCRIPTION CAS\$ WEIGHT OSHA-PEL ACGIH-TLV MMHg 068DF LEL 313 ---- OTHER ----TRIBASIC LEAD SULFATE UNKNOWN 1.73 0.05 MG/M3 0.05 MG/M3 .99 N/A YES (AS LEAD)

SECTION III PHYSICAL

BOILING RANGE, DEG. F HIGH N/E LOW N/E

VAPOR PRESSURE, MM HG .99

VAPOR DENSITY LIGHTER THAN AIR EVAPORATION RATE SLOWER THAN ETHER

WEIGHT PER GALLON, LBS. 9.8

Z VOLATILE BY VOLUME

A/A

% VOLATILE BY WEIGHT

N/A N/A = NOT APPLICABLE N/E = NOT ESTABLISHED

PH - SOLUBILITY- N/A

MANUFACTURER'S CODE: X7956 Revision: Of

DATE OF PREPARATION- 5/01/92

SECTION IV -- FIRE AND EXPLOSION MAZARD DATA FLAMMADILITY CLASSIFICATION OSHA-CLASS III-B DOT- NOT REGULATED LOWEST FLASHPOINT T.C.S., DEG. F > 200.0 LOWER EXPLOSION LEVEL (LEL)

EXTINGUISHING MEDIA: "Alcohol" Foam, CO2, Dry Chemical.

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION MAZARDS: Water spray may be used to cool closed

containers during a fire to prevent explosion due to steam build-up.

#### SECTION V -- HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: Irritating to eyes, skim, mose and throat. Headaches, dizziness and mausea can result. COULD BE TOXIC IF INGESTED. SEE SECTION IX FOR FURTHER HEALTH INFORMATION.

DOES THIS PRODUCT CONTAIN ANY CHEMICALS CLASSIFIED AS KNOWN OR SUSPECTED CARCINGGENS (NTP/IARC/OSHA/ACGIH)? (XXX)-YES(If contains chromates) ( )-NO PRIMARY ROUTE(S) OF ENTRY: (XXX)-DERMAL (XXX)-INHALATION ( )-INGESTION EMERGENCY AND FIRST AID PROCEDURES: INHALATION-Remove to fresh air. Restore breathing. CONSULT A PHYSICIAN. SPLASH (EYES)-Flush with water for at least 15 minutes. CONSULT A PHYSICIAN. SPLASH (SKIN)-Wash affected areas with soap and water. Remove contaminated clothing. CONSULT A PHYSICIAN IF IRRI-TATION PERSISTS. INGESTION-Drink 1 or 2 glasses of water to dilute. Do NOT induce vomiting. CONSULT A PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY. MEDICAL CONDITIONS PROME TO AGGRAVATION BY EXPOSURE: Pre-existing skin disorders, chronic respiratory disease, anemia (if product contains lead.)

#### SECTION VI -- REACTIVITY DATA

STABILITY: Stable.

CONDITIONS TO AVOID: None reasonably foreseeable.

INCOMPATABILITY (MATERIALS TO AVOID): Strong oxidizing agents.

HAZARDOUS POLYMERIZATION: Will not occur.

COMDITIONS TO AVOID: None reasonably foreseeable.

#### SECTION VII SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Add absorbent to spill area. Recover free liquid. Keep chemical products out of streams and waterways.

WASTE DISPOSAL METHOD: In accordance with local, state, and federal regulations.

#### SECTION VIII-- SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: As needed to keep air contaminant exposure below

TLV or PEL.

Must keep the air contaminant concentration below current VENTILATION: applicable OSHA Permissible Exposure Limit (PEL) or ACGIH's Threshold Limit Value (TLV).

PROTECTIVE GLOVES: As required to avoid skin contact.

EYE PROTECTION: Chemical safety goggles or face shields should be worn

in any industrial setting.

OTHER PROTECTIVE EQUIPMENT: Remove and wash contaminated clothing bef

HYGIENIC PRACTICES: Wash hands before smoking, eating, or using toile facilities.

0908-3285

MANUFACTURER'S CODE: X7956 Ravision: 01

DATE OF PREPARATION- 5/01/92

SECTION IX-- SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Keep container closed.

Use with adequate ventilation.

STHER PRECAUTIONS: Avoid contact with eyes and prolonged or repeated con-

tact with skin. DO NOT INGEST. \*MAY CONTAIN ONE OR MORE OF THE FOLLOWING (see Section II for ingredients):

(1) LEAD. Repeated and prolonged exposure to lead may cause delayed effects involving the blood, gastrointestinal, nervous and reproductive systems.

(2) CMMOMATES. Chromium and certain chromium compounds are listed as known carcinogens by the NTP & IARC.

Keep exposures to these substances below the current ACGIN TLV or OSHA PSL.

THESE DATA RELATE ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DO NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL. MSDS:02 Prepared by: L. Dussault MERTON COATINGS INC. HAYNES CIRCLE CHICOPEE MA. 01002-3794

\* \* MATERIAL SAFETY DATA SWEET \* \* \*

TRW FASTENERS DIV 120 ROGERS STREET

CAMBRIDGE

HA 02142-0000

ATTENTION: Safety Director

DEAR CUSTOMER,

ENCLOSED PLEASE FIND UPDATED MSDS IN ACCORDANCE WITH THE OSHA HAZARD COMMUNICATION STANDARD (29CFR1910.1200) FOR A PRODUCT YOU RECENTLY ORDERED. IF YOU REQUIRE ANY ADDITIONAL MSDS PLEASE REQUEST BY ENTERING THE PRODUCT ID IN THE SPACES PROVIDED BELOW. FOLD REQUEST WITH RETURN ADDRESS FACING OUTWARD.

REQUEST FOR ADDITIONAL MSDS

LIST PRODUCT NUMBERS

2. \_\_\_\_\_

THIS PRODUCT CONTAINS A TOXIC CHEMICAL OR CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF SARA TITLE III AND OF 40CFR372 IF "YES" IS FRINTED IN THE COLUMN LABELED SARA 313 IN SECTION II OF THE MSDS.

(STAPLE)-

PLACE POSTAGE HERE

TRW FASTENERS DIV 120 ROGERS STREET

CAMBRIDGE

MA

02142-0000

MORTON COATINGS INC. HAYNES CIRCLE CHICOPEE MA 01020-3794

0908-3287

TRW-01909

# U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration

Form Approved OMB No. 44-R1387

## RECEIVED

# MATERIAL SAFETY DATA SHEET

JUN 10 1985

D BORSUK

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SEC	CTION I
MANUFACTURER'S NAME POLAR CHIP, INC.	EMERGENCY TELEPHONE NO. (714) 751-4771 or 645-7187
ADDRESS (Number, Street, City, State, and ZIP Code) 17421 Murphy Avenue	Irvine, CA 92714
CHEMICAL NAME AND SYNONYMS	NONYMS
CHEMICAL FAMILY	Proprietary

PAINTS, PRESERVA	TIVES, & SOLVENTS	*	TLV (Units)	ALLOYS AND METALLIC CO.	ATINGS	*	TLV (Units)
PIGMENTS	N/A			BASE METAL	N/A		
CATALYST	N/A			ALLOYS	N/A		
VEHICLE	N/A			METALLIC COATINGS	N/A		
SOLVENTS	N/A			FILLER METAL PLUS COATING OR CORE FLUX	N/A		
ADDITIVES	N/A			OTHERS	N/A		
OTHERS			ĺ		•		
	HAZARDOUS MIXTURE	S OF C	OTHER LIC	QUIDS, SOLIDS, OR GASES		*	TLV (Units)
•							
		,					

SECTION III - PHYSICAL DATA						
BOILING POINT (°F.)	2120	SPECIFIC GRAVITY (H2C=1)	1.02			
VAPOR PRESSURE (mm Hg.)	22	PERCENT, VOLATILE BY VOLUME (%)	81			
VAPOR DENSITY (AIR=1)	0.64	EVAPORATION RATE ( Water = 1)	1			
SOLUBILITY IN WATER	infinite					
APPEARANCE AND ODOR Yell	ow liquid - mile	d odor				

SECTION IV - FIRE AND EXPLOSION HAZARD DATA					
FLASH POINT (Method used)	N/A	FLAMMABLE LIMITS	Lei	Uel	
EXTINGUISHING MEDIA	N/A	*			
SPECIAL FIRE FIGHTING PROCE					
UNUSUAL FIRE AND EXPLOSION	HAZAROS N/A		TRW	7-01910	

PAGE (1)

(Continued on reverse side)

Form OSHA-20 Rev. May 72

	12	CTION	V . HEAL	TH HAZARD C	ΝΔΤΔ
THRESHOLD LIMIT			- IILAL	. III IIAZAND L	<u> </u>
EFFECTS OF OVER	EXPOSURE				
·					
	FIRST AID PROCEDU ase of ingest		luce vomi	ting. Eyes.	rinse with isotonic
					otion or cream.
		SECTIO	N VI - RE	ACTIVITY DA	TA
STABILITY	UNSTABLE		CONDITION	S TO AVOID	
	STABLE	XX			••
INCOMPATABILITY	(Materials to avoid)	1143			
	MPOSITION PRODU				
	ire oxides of		on may ru	CONDITIONS TO	
HAZARDOUS POLYMERIZATION	WILL NOT				with oxidizable chemicals in
,	WILL NOT	CCOR	XX	evap	orated state.
	<del>, , , , , , , , , , , , , , , , , , , </del>		<del></del>		
	SECT	ION VII	- SPILL (	OR LEAK PROC	EDURES
STEPS TO BE TAKE	N IN CASE MATERI	AL IS RELE			
			Mo	p up and rins	se area with water.
WASTE DISPOSAL	METHOD				
WASTE BISPOSILE		<u>be disp</u>	osed of	in primary se	ewage treatment in absence
	of t	ramp oi	1		
					······································
	SECTION	V/III C	DECIAL D	ROTECTION IN	ISOPMATION
SECOLDATORY BOX	SECTION Specify to		PECIAL P	HUIECIION IN	
RESPIRATORY PIL	T LOCAL EXHAUST		required		TSPECIAL
VENTILATION		N	one		
	MECHANICAL (Ge	neral)			OTHER
PROTECTIVE GLOV	V <b>ES</b> None			EYE PROTECTION	Safety glasses
OTHER PROTECTIV	VE EQUIPMENT	Hand	cream. i	f desired	
			<u> </u>		
1	. \$	ECTION	IX - SPE	CIAL PRECAUT	TIONS
PRECAUTIONS TO	BE TAKEN IN HAND	LING AND	STORING	none For a	ccidental contact, rinse
		•		<b>#</b>	
OTHER PRECAUTION	with water. V	Cal KOR	K122 92	with handling	any 114mm

PAGE (2)

None.

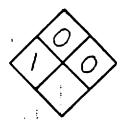
Form OSHA-20 Rev. May 72



17421 Murphy Ave., Irvine, CA 92714 (714) 863-9211

STANDARD NO.	MSD'S NO.			
i vitesii	POLAR CLEAN 112			

SECTION I PRODUCT IDENTIFICA	POLAR CLEAN 112  Alkaline Cleaner  WHER'S NAME  REGULAR PHONE NO.			
POLAR CLEAN 112				
MANUPACTURER'S NAME POLAR CHIP INC.		REGULAR PHONE NO.		
ADDRESS (NO., STREET, CITY, STATE, ZIP CODE)  17421 Murphy Ave., Irvine, CA 92714		EMERGENCY PHONE NO.		



SECTION 2 INGREDIENTS (LIST ALL)					
MATERIAL OR COMPONENT			HAZARD DATA (TLV, LDSG OR LCSG)		
CAS# 64742-47-8 (C10-C12 Aliphatic Hydro Carbon 3%)					
CAS# 6834-92-0 Sodiummetasilicate 0.3%					
CAS# 9004-83-5 C <sub>12</sub> Thioether 6%	!		11/10/11/19		
CAS# 57-55-6 Propylene Clycol 1%	ĺ	•			
Water					
	·	•			
			, t		

SECTION S PHYSICAL DATA						
BOILING POINT, 700MM	212 <sup>0</sup> F	MELTING POINT	30° F			
SPECIFIC GRAVITY (N g = 1)	1.03	VAPOR PRESSURE	22mm			
VAPOR DENSITY (AIR = 1)	0.64	SOLUBILITY IN	100 %			
% VOLATILES BY VOLUME	90	EVAPORATION RATE (Water = #	1			
APPEARANCE AND ODOR: Ye	llow liquid, mild odor					

SECTION 4 FIRE AND EXPLOSION DATA							
FLASH POINT (TEST METHOD)	No flash COC	AUTOIGHTION TEMPERATURE	800°	F FLAM	MADLE LIMTS IN BY YOLUME	LOWER	uppen
EXTINGUISHING MEDIA	Water, CO <sub>2</sub> , Dry P	owder	i	,			~
SPECIAL PIRE FIGH	ITING PROCEDURES Use of	Chlorinated se	olvent	fire	extinguisher	s should be	e avoided.

TRW-01912

UNUSUAL FIRE AND EXPLOSION HAZARD

Oxides of sulfur may be generated in a raging fire. Full self-contained breathing apparatus fire protection suits are recommended.

PAGE 1 OF 4

	MSDS NO.	
POLAR	CLEAN	112

STEPS TO BE TAKE		SECTION / SPILE ON	LEAK PROCEDURES	•		
	EN IF MATERIAL IS RELEASE	ED OR SPILLED MOD 1	up or use dry abso	orbents.		
EUTRALIZING CH	EMICALS:					
ASTE DISPOSAL M	ETHOD:					
			be disposed of ac		local	•
		state	e, and federal re	guiations.		
: : : : : : : : : : : : : : : : : : : :						
ENTILATION REQ		SECTION & SPECIAL PRO	<del></del>	7.0		
	Material		f hazardous vapor: n (100 linear fee			
RESPIRATORY (SF	PECIFY IN DETAIL)		ROTECTIVE EQUIPMENT	t is bains	formed	l by workin
		is supply ventilat	quired. If a mistion.	c is being	Tormet	. by workin
EYE:		1 . 1	GLOVES:		: c	. 1 . 1
· <del></del>	or face shield, i	<del></del>	Plastic	or rubber	11 nee	dea.
OTHER CLOTHIN	Non	ne required	,		=	•
<u> </u>						
		SECTION 9 TRANS	SPORTATION DATA			
		HAZARDOUS CH	ARACTERISTICS			
CORROSIVE	∏ <b>e</b> s	AMMABLE LIQUID	FLAMMA	BLE SOLIDS		EXPLOSIVES
	٠٠-				. —	
			; <u> </u>	_		
OXIDIZER	Pou	DISON	MAGNETI	c		HON-FLAMMABI
OXIDIZER	_	DIOACTIVE X NO	MAGNETI		0	HON-FLAMMASI
FLAMMABLE	GAS RAI		MAGNETI	FLASH		
FLAMMABLE	_	DIOACTIVE X NO	MAGNETI ONE OTHER		•	
D.O.T.	Class 60	DIOACTIVE X NO	MAGNETI	FLASH	PET,QUA	c :
FLAMMABLE	GAS RAI	DIOACTIVE X NO	MAGNETI ONE OTHER _	FLASH	NET,QUA	c :
D.O.T. CLASSIFICATION  ARTICLE	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING	FLASH POINT PASSEN	NET,QUA	C
D.O.T. CLASSIFICATION  ARTICLE	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING SPEC. REO'MT.	FLASH POINT PASSEN	HET,QUA	C
FLAMMABLE D.O.T. CLASSIFICATION  ARTICLE NO.	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING SPEC. REO'MT.	FLASH POINT PASSEN	HET,QUA	C
FLAMMABLE D.O.T. CLASSIFICATION  ARTICLE NO.	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING SPEC. REO'MT.	FLASH POINT PASSEN	HET,QUA	C
D.O.T. CLASSIFICATION  ARTICLE	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING SPEC. REO'MT.	FLASH POINT PASSEN	HET,QUA	C
FLAMMABLE D.O.T. CLASSIFICATION  ARTICLE NO.	Class 60	DO NOT WRITE	MAGNETI ONE OTHER  BELOW THIS LINE ACKAGING SPEC. REO'MT.	FLASH POINT PASSEN	NET,QUA	C

DOT AD	CTEAN	110
PULAR	CLEAN	112

SECTION S HEALTH MAZARD INFORMATION	- 199
HEALTH HAZARD	
ROUTES OF EXPOSURE	
INHALATION: -none-	
Through splashing or spilling.	
SKIN ABSORPTION: -none-	
Splashing or transfer to eyes by contaminated hands.	
Transfer to food by contaminated hands.	
EFFECTS OF OVEREXPOSURE	<del></del>
May irritate skin with prolonged contact.	<u></u>
CHRONIC: Not known.	
EMERGENCY AND FIRST AID PROCEDURES	
Flush eyes with water or isotonic solution - see physician.	
Rinse off with water - wash with soap and water.	
Move to clean air - provide ventilation.	•
Give water.	<u> </u>
Danger to eyes is mostly from infection of eyes after protective eye fluids are removed. Provide anti-infection and local anesthetic solution.	
STABILITY: ;   CONDITION TO AVOID:	
STABLE QUESTABLE Substances that react with water.	
Substances that react with water.	
In a raging fire, oxides of sulfur may be evolved.	
HAZARDOUS POLYMERIZATION: CONDITIONS TO AVOID:  A raging fire.  TRW-0191	4

MSDS NO.
POLAR CLEAN 112

	58	CTION 10 SPECIAL	PRECAUTIONS		
STORAGE:  OUTDOOR STORAGE PERMITTED  (if above 32 F)	INDOOR STORAGE REQUIRED - NO TEM	P. CONTROL	STORE UNDER C	ONTROLLED 30 <sup>0</sup> F	то <u>120<sup>0</sup>F</u> • ғ
HANDLING: Good house	ekeeping and prud	ent care will	be sufficient	to avoid prob	lems.
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PREPARED BY:	h R. Whitcomb	TITLE	Chief Chemist	DAT	ctober 14, 1986
ADDRESS	1 Murphy Ave., Irv	vine CA 927	14		
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PAGE 4 OF

72-62-7820-01 MATERIAL SAFETY

DATA SHEET

# Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

P. O. BOX 2219, COLUMBUS, OHIO 43216 + (614) 889-3333

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

Ashland

000109

# POLYPRO HIMONT 6523 NATURAL

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: POLYPRO HIMONT 6523 NATURAL

FASTENERS DIVISION TRW CONTROLS & FASTENERS GROU 265 THIRD STREET CAMBRIDGE

MA 02142

OA 53 014 8796550-

Data Sheet No: 0162815-001 Prepared: 09/01/88 Supersedes: ( N/A )

PRODUCT: 5905860

INVOICE: 739003
INVOICE DATE: 09/01/88
TO: FASTENERS DIVISION
TRM CONTROLS & FASTENERS GROU
180 STATE ROAD RTE 2A

ATTN: PLANT MGR./SAFETY DIR.

ASECTION MI-PRODUCT FIDENTIFICATION

General or Generic ID: THERMOPLASTIC RESIN DOT Hazard Classification: NOT APPLICABLE

# \*SECTION II-COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT

<u> 次 (by MT)</u>

PEL.

TLV

Note

POLYPROPYLENE HOMOPOLYMER

100

(1)

#### Notes:

( 1) PEL/TLV NOT ESTABLISHED. THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 29 CFR 1910.1200 (OSHA HAZARD COMMUNICATION STANDARD).

	SECTION 1.11—PHYSICAL SUATA CAR STOCK TO SECTION 1.11—PHYSICAL SUATA CAR STOCK
Boiling Point	NOT APPLICABLE
Vapor Pressure	NOT APPLICABLE
Specific Vapor Density	NOT APPLICABLE
Specific Gravity	UNAVAILABLE
Percent Volatiles	NOT APPLICABLE
Evaporation Rate	NOT APPLICABLE
	ACCURACY TO THE TANK OF THE TA

OFOTTON ITT BUNGTON DATA

# SECTION IV-FIRE AND EXPLOSION INFORMATIONS

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT

NOT APPLICABLE

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, ETC.

FIREFIGHTING PROCEDURES: MEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

MATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SPECIAL FIRE & EXPLOSION HAZARDS: DUST MAY BE AN EXPLOSION HAZARD.

# SECTION \*V-HEALTH \*HAZARD \*DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

CONTACT WITH MOLTEN MATERIAL WILL CAUSE THERMAL BURNS.

## FIRST AID:

I SKIN: SHOULD MOLTEN MATERIAL STRIKE THE SKIN, IMMEDIATELY FLUSH WITH COLD WATER TO COOL AND SOLIDIFY THE MATERIAL. GET IMMEDIATE MEDICAL ATTENTION.

#### PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

# SECTION VI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

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CONTINUED ON PAGE: 2

72-62-7820-01
MATERIAL SAFETY

**DATA SHEET** 

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24-HOUR EMERGENCY TELEPHONE (606) 324-1133



Page: 2

000109

#### POLYPRO HIMONT 6523 NATURAL

# SECTION \*VII-SPILL OR LEAK \*PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: SWEEP UP MATERIAL FOR DISPOSAL OR RECOVERY.

LARGE SPILL: SHOVEL MATERIAL INTO CONTAINERS. THOROUGHLY SHEEP AREA OF SPILL TO CLEAN UP ANY RESIDUAL MATERIAL.

#### MASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

# \*\*SECTION \*VIII-PROTECTIVE \*\*EQUIPMENT \*\*TO \*\*BE \*\*USED \*\*\*\*\*

RESPIRATORY PROTECTION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

EYE PROTECTION: WEAR SAFETY GLASSES IN COMPLIANCE WITH OSHA REGULATIONS. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER OTHER PROTECTIVE EQUIPMENT: NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

# SECTION \*IX-SPECIAL \*PRECAUTIONS \*OR \*OTHER \*COMMENTS \*

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING MITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

DATA SHEET

# Ashland Chemical Company

DIVISION OF ASHLAND DIL, INC.

P. O. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333





## **DEFINITIONS**

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

### SECTION I PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

# SECTION II

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional information may be found in Section V. Other components may be listed if deemed appropriate.

Identities of components listed generically are declared trade secret.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

# SECTION III PHYSICAL DATA

**BOILING POINT:** Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

**EVAPORATION RATE:** Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

# SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

**EXPLOSION LIMITS:** For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

## **SECTION IV (cont.)**

**EXTINGUISHING MEDIA:** Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

#### SECTION V HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

## SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

## SECTION VII SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

# SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

# SECTION IX SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

# **ADDITIONAL COMMENTS**

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

72-62-7820-01 MATERIAL SAFETY

DATA SHEET

# Ashland Chemical Company

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24-HOUR EMERGENCY TELEPHONE (606) 324-1133

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#### POLYPRO HIMONT 7523 NATURAL

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMPUNICATION STANDARD)

Product Name: POLYPRO MINIST 7523 NATURAL

FASTENERS DIVISION TRM CONTROLS & FASTENERS GROU 265 THIRD STREET CAMBRIDGE MA 02142

OA 53 014 8796550-

0162828-001 07/29/88 ( N/A ) Data Sheet No: Prepared:

Supersedes:

PRODUCT: 5905872
INVOICE: 534486
INVOICE DATE: 06/07/88
TO: FASTENERS DIVISION
TRM CONTROLS & FASTENERS GROU
180 STATE ROAD RTE 2AMA 01477

PEL

ATTN: PLANT MGR./SAFETY DIR.

SECTION I-PRODUCT WIDENTIFT CATTION

General or Generic ID: THERMOPLASTIC RESIN DOT Hazard Classification: NOT APPLICABLE

\*\*\*SECTION «III~COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT

% (by MT)

TLV

Note

PROPYLENE-ETHYLENE COPOLYMER

100

(1)

#### Notes:

( 1) PEL/TLV NOT ESTABLISHED. THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 29 CFR 1910.1200 (OSHA HAZARD COMMUNICATION STANDARD).

\*SECTION: III-PHYSICAL \*\*DATA \*\*\* NOT APPLICABLE **Boiling Point** Vapor Pressure NOT APPLICABLE Specific Vapor Density NOT APPLICABLE Specific Gravity LESS THAN WATER NOT APPLICABLE Percent Volatiles

NOT APPLICABLE **Evaporation Rate** 

SECTION IV-FIRE AND SEXPLOSION INFORMATION

FLASH POINT NOT APPLICABLE

EXPLOSIVE LIMIT

NOT APPLICABLE

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, ETC.

FIREFIGHTING PROCEDURES: MEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SPECIAL FIRE & EXPLOSION HAZARDS: DUST MAY BE AN EXPLOSION HAZARD.

# SECTION V-HEALTH \*HAZARD \*DATA \*\*

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

CONTACT WITH MOLTEN MATERIAL WILL CAUSE THERMAL BURNS.

# FIRST AID:

IF ON SKIN: SHOULD MOLTEN MATERIAL STRIKE THE SKIN, IMMEDIATELY FLUSH WITH COLD WATER TO COOL AND SOLIDIFY THE MATERIAL. GET IMMEDIATE MEDICAL ATTENTION.

# PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

# \*SECTION VI-REACTIVITY \*DATA \*

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT HITH:, STRONG OXIDIZING AGENTS.

TRW-01919

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CONTINUED ON PAGE: 2

# Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

P 0 80X 2219, COLUMBUS, OHIO 43216 • (614) 889-3333 24-HOUR EMERGENCY TELEPHONE (606) 324-1133



MATERIAL SAFETY
DATA SHEET

000081 POLYPRO HIMONT 7523 NATURAL

Page: 2

# SECTION WITHSPILL CORCLEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: SWEEP UP MATERIAL FOR DISPOSAL OR RECOVERY.

LARGE SPILL: SHOVEL MATERIAL INTO CONTAINERS. THOROUGHLY SWEEP AREA OF SPILL TO CLEAN UP ANY RESIDUAL MATERIAL.

#### **MASTE DISPOSAL METHOD:**

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SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

# 

RESPIRATORY PROTECTION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

PROTECTIVE GLOVES: MEAR RESISTANT GLOVES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

EYE PROTECTION: MEAR SAFETY GLASSES IN COMPLIANCE MITH OSHA REGULATIONS. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER OTHER PROTECTIVE EQUIPMENT: NORMAL MORK CLOTHING COVERING ARMS AND LEGS.

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CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT MARRANTED TO BE MHETHER ORIGINATING MITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

DATA SHEET

# Ashland Chemical Company

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# DEFINITIONS

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

## SECTION I PRODUCT IDENTIFICATION

GENERAL OR GENERIC ID: Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

# SECTION II COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional information may be found in Section V. Other components may be listed if deemed appropriate.

Identities of components listed generically are declared trade secret.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

# SECTION III PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

#### SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

**EXPLOSION LIMITS:** For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

#### **SECTION IV (cont.)**

EXTINGUISHING MEDIA: Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

## SECTION V HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

## SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

**STABILITY:** Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

## SECTION VII SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

# SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

# SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

#### **ADDITIONAL COMMENTS**

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

# Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

MATERIAL SAFETY DATA SHEET

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000003197

#### POLYPRO HIMONT PP65-F4-2 NT

Page: 1

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: POLYPRO HIMONT PP65-F4-2 NT

OA 53 014 8796550-

Data Sheet No: 0169160-001 04/27/88 ( N/A )

FASTENERS DIVISION TRW CONTROLS & FASTENERS GROU 265 THIRD STREET CAMBRIDGE MA 02142

PRODUCT: 5915876
INVOICE: 555214
INVOICE DATE: 06/15/88
TO: FASTENERS DIVISION
TRM CONTROLS & FASTENERS GROU
180 STATE ROAD RTE 2A

ATTN: PLANT MGR./SAFETY DIR.

SECTION #I-PRODUCT TIDENTIFICATION

General or Generic ID: THERMOPLASTIC RESIN DOT Hazard Classification: NOT APPLICABLE

#### SECTION SITECOMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION SEE DEFINITION PAGE FOR CLARIFICATION

INGREDIENT

TLY

<u>Note</u>

FILLED POLYPROPYLENE HOMOPOLYMER

100

(1)

#### Notes:

( 1) PEL/TLV NOT ESTABLISHED. THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 29 CFR 1910.1200 (OSHA HAZARD COMMUNICATION STANDARD).

\*SECTION III-PHYSICAL \*DATA

**Boiling Point** 

NOT APPLICABLE

Vapor Pressure

NOT APPLICABLE

Specific Vapor Density

NOT APPLICABLE

Specific Gravity

1.350 77.00 Deg F 25.00 Deg C) . 900

Percent Volatiles

NOT APPLICABLE

**Evaporation Rate** 

NOT APPLICABLE

# SECTION TIV-FIRE -AND \*EXPLOSION MINFORMATION

FLASH POINT

625.0 Deg F

329.4 Deg C)

EXPLOSIVE LIMIT

NOT APPLICABLE

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, ETC.

FIREFIGHTING PROCEDURES: WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SPECIAL FIRE & EXPLOSION HAZARDS: DUST MAY BE AN EXPLOSION HAZARD.

## SECTION \*V-HEALTH \*HAZARD \*DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

CONTACT WITH MOLTEN MATERIAL HILL CAUSE THERMAL BURNS.

FIRST AID:

IF ON SKIN: SHOULD MOLTEN MATERIAL STRIKE THE SKIN, IMMEDIATELY FLUSH WITH COLD WATER TO COOL AND SOLIDIFY THE MATERIAL. GET IMMEDIATE MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

# SECTION WI-REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

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# Ashland Chemical Company

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MATERIAL SAFETY DATA SHEET P. O. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333



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### POLYPRO HIMONT PP65-F4-2 NT

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

SECTION VII - SPILL FOR LEAK PROCEDURES

Page: 2

#### ATTENTAL TO DELETACED OR COTALED

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: SWEEP UP MATERIAL FOR DISPOSAL OR RECOVERY.

LARGE SPILL: SHOVEL MATERIAL INTO CONTAINERS. THOROUGHLY SWEEP AREA OF SPILL TO CLEAN UP ANY RESIDUAL MATERIAL.

WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

# SECTION AVIII-PROTECTIVE SEQUIPMENT TO BE SUSED

RESPIRATORY PROTECTION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

EYE PROTECTION: WEAR SAFETY GLASSES IN COMPLIANCE WITH OSHA REGULATIONS. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER OTHER PROTECTIVE EQUIPMENT: NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

# 

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

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DIVISION OF ASHLAND OIL, INC.

P 0 80X 2219, COLUMBUS, OHIO 43216 + (614) 889-3333

24-HOUR EMERGENCY TELEPHONE (606) 324-1133



#### **DEFINITIONS**

This definition page is intended for use with Material Safety Data Sheets supplied by the Ashland Chemical Company. Recipients of these data sheets should consult the OSHA Safety and Health Standards (29 CFR 1910), particularly subpart G - Occupational Health and Environmental Control, and subpart I - Personal Protective Equipment, for general guidance on control of potential Occupational Health and Safety Hazards.

## SECTION I PRODUCT IDENTIFICATION

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DATA SHEET

**GENERAL OR GENERIC ID:** Chemical family or product description.

DOT HAZARD CLASSIFICATION: Product meets DOT criteria for hazards listed.

# SECTION II COMPONENTS

Components are listed in this section if they present a physical or health hazard and are present at or above 1% in the mixture. If a component is identified as a CARCINOGEN by NTP, IARC or OSHA as of the date on the MSDS, it will be listed and footnoted in this section when present at or above 0.1% in the product. Negative conclusions concerning carcinogenicity are not reported. Additional information may be found in Section V. Other components may be listed if deemed appropriate.

Identities of components listed generically are declared trade secret.

Exposure recommendations are for components. OSHA Permissible Exposure Limits (PELs) and American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) appear on the line with the component identification. Other recommendations appear as footnotes.

#### SECTION III PHYSICAL DATA

BOILING POINT: Of product if known. The lowest value of the components is listed for mixtures.

VAPOR PRESSURE: Of product if known. The highest value of the components is listed for mixtures.

SPECIFIC VAPOR DENSITY: Compared to AIR = 1. If Specific Vapor Density of product is not known, the value is expressed as lighter or heavier than air.

SPECIFIC GRAVITY: Compared to WATER = 1. If Specific Gravity of product is not known, the value is expressed as less than or greater than water.

pH: If applicable.

PERCENT VOLATILES: Percentage of material with initial boiling point below 425 degrees Fahrenheit.

EVAPORATION RATE: Indicated as faster or slower than ETHYL ETHER, unless otherwise stated.

## SECTION IV FIRE AND EXPLOSION DATA

FLASH POINT: Method identified.

**EXPLOSION LIMITS:** For product if known. The lowest value of the components is listed for mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Known or expected hazardous products resulting from heating, burning or other reactions.

## SECTION IV (cont.)

**EXTINGUISHING MEDIA:** Following National Fire Protection Association criteria.

FIREFIGHTING PROCEDURES: Minimum equipment to protect firefighters from toxic products of vaporization, combustion or decomposition in fire situations. Other firefighting hazards may also be indicated.

SPECIAL FIRE AND EXPLOSION HAZARDS: States hazards not covered by other sections.

NFPA CODES: Hazard ratings assigned by the National Fire Protection Association.

# SECTION V HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LIMIT: For product.

THRESHOLD LIMIT VALUE: For product.

EFFECTS OF ACUTE OVEREXPOSURE: Potential local and systemic effects due to single or short term overexposure to the eyes and skin or through inhalation or ingestion.

EFFECTS OF CHRONIC OVEREXPOSURE: Potential local and systemic effects due to repeated or long term overexposure to the eyes and skin or through inhalation or ingestion.

FIRST AID: Procedures to be followed when dealing with accidental overexposure.

PRIMARY ROUTE OF ENTRY: Based on properties and expected use.

#### SECTION VI REACTIVITY DATA

HAZARDOUS POLYMERIZATION: Conditions to avoid to prevent hazardous polymerization resulting in a large release of energy.

STABILITY: Conditions to avoid to prevent hazardous or violent decomposition.

INCOMPATIBILITY: Materials and conditions to avoid to prevent hazardous reactions.

# SPILL OR LEAK PROCEDURES

Reasonable precautions to be taken and methods of containment, clean-up and disposal. Consult federal, state and local regulations for accepted procedures and any reporting or notification requirements.

# SECTION VIII PROTECTIVE EQUIPMENT TO BE USED

Protective equipment which may be needed when handling the product.

# SPECIAL PRECAUTIONS OR OTHER COMMENTS

Covers any relevant points not previously mentioned.

# **ADDITIONAL COMMENTS**

Containers should be either reconditioned by CERTIFIED firms or properly disposed of by APPROVED firms. Disposal of containers should be in accordance with applicable laws and regulations. "EMPTY" drums should not be given to individuals. Serious accidents have resulted from the misuse of "EMPTIED" containers (drums, pails, etc.). Refer to Sections IV and IX.

# Ashland Chemical Company

DIVISION OF ASHLAND DIL, INC.

P. D. BOX 2219, COLUMBUS, DHIO 43216 • (614) 889-3333 24-HOUR EMERGENCY TELEPHONE (606) 324-1133



MATERIAL SAFETY
DATA SHEET

# ENVIRONMENTAL and OCCUPATIONAL SAFETY DEPARTMENT

R. H. Toeniskoetter, Manager

FASTENERS DIVISION
TRW CONTROLS & FASTENERS GROU
265 THIRD STREET
CAMBRIDGE MA 02142

ATTN: PLANT MGR. / SAFETY DIR.

Dear Customer:

Ashland Chemcial Company, through a computerized system, provides its customers with a material safety data sheet the first time a product is purchased. If the material safety data sheet is changed, a copy of the revised sheet is sent to customers who purchased the product in the previous twelve months. If a customer has not purchased a particular product for twelve months and then purchases it again, another copy of the material safety data sheet is sent.

The material safety data sheet is addressed to the attention of the **PLANT MANAGER/SAFETY DIRECTOR** and is mailed to the same address as the invoice. The shipping address is printed on the right side of the first page of the data sheet along with the invoice number and the invoice date. This information should help you direct the material safety data sheet to the proper location so that those who are responsible for managing or designing operations involving the use of the product, or who actually use or handle the product and may potentially be exposed to it, have access to the most current health and safety information available.

When an Ashland Chemical product is resold in the original package with an Ashland label, the reseller has the responsibility of distributing the Ashland material safety data sheet. If you use the Ashland products in your formulations, the health and safety information contained in the material safety data sheet may be used in the hazard evaluation of your product as described in 29 CFR 1910.1200 (Hazard Communication).

Ashland Chemical Company is committed to providing accurate health and safety information on the products that we manufacture or distribute. We have a program to continually review and revise our material safety data sheets to provide the most current information available. We also strive to improve the ways in which we communicate product safety information so that it is as clear as it is complete. We appreciate your continued business and assure you that we will take the steps necessary to ensure that the material safety data sheets are updated as needed.

Ashland Chemical Company

DIVISION OF ASHLAND DIL, INC.

P. D. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333

24-HOUR EMERGENCY TELEPHONE (606) 324-1133

Ashland

Page: 1

MATERIAL SAFETY DATA SHEET

000006

POLYPRO HIMONT PP65-F4-4 NT

THIS MSDS COMPLIES WITH 29 CFR 1910.1200 (THE HAZARD COMMUNICATION STANDARD)

Product Name: POLYPRE: HENONT PP65-F4-4 NT

OA 53 014 8796550-

Data Sheet No: 0164328-001 Prepared: 04/27/88 Supersedes: (N/A)

FASTENERS DIVISION TRM CONTROLS & FASTENERS GROU 265 THIRD STREET CAMBRIDGE MA 02142

PEL

PRODUCT: 5905914
INVOICE: 701879
INVOICE DATE: 08/17/88
TO: FASTENERS DIVISION
TRH CONTROLS & FASTENERS GROU
180 STATE ROAD RTE 2A
WESTMANSTER

ATTN: PLANT MGR./SAFETY DIR.

SECTION I-PRODUCT IDENTIFICATION

General or Generic ID: THERMOPLASTIC RESIN

DOT Hazard Classification: NOT APPLICABLE

SECTION II-COMPONENTS

IF PRESENT, IARC, NTP AND OSHA CARCINOGENS ARE IDENTIFIED IN THIS SECTION SEE DEFINITION PAGE FOR CLARIFICATION

**INGREDIENT** 

% (by WT)

<u>Note</u>

FILLED POLYPROPYLENE HOMOPOLYMER

100

TLV

(1)

Notes:

( 1) PEL/TLY NOT ESTABLISHED. THIS MATERIAL IS NOT HAZARDOUS AS DEFINED BY 29 CFR 1910.1200 (OSHA HAZARD COMMUNICATION STANDARD).

SECTION III-PHYSICAL DATA

**Boiling Point** 

NOT APPLICABLE

Vapor Pressure

NOT APPLICABLE

Specific Vapor Density

NOT APPLICABLE

Specific Gravity

1.350 77.00 Deg 25.00 Deg

Percent Volatiles

NOT APPLICABLE

Evaporation Rate

NOT APPLICABLE

SECTION IV-FIRE AND EXPLOSION INFORMATION

FLASH POINT

> 625.0 Deg F

329.4 Deg C)

EXPLOSIVE LIMIT

NOT APPLICABLE

EXTINGUISHING MEDIA: REGULAR FOAM OR WATER FOG OR CARBON DIOXIDE OR DRY CHEMICAL

HAZARDOUS DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS:, CARBON DIOXIDE AND CARBON MONOXIDE, ETC.

FIREFIGHTING PROCEDURES: MEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACEPIECE OPERATED IN THE POSITIVE PRESSURE DEMAND MODE AND FULL BODY PROTECTION WHEN FIGHTING FIRES.

WATER MAY BE USED TO KEEP FIRE-EXPOSED CONTAINERS COOL UNTIL FIRE IS OUT.

SPECIAL FIRE & EXPLOSION HAZARDS: DUST MAY BE AN EXPLOSION HAZARD.

SECTION V-HEALTH HAZARD DATA

PERMISSIBLE EXPOSURE LEVEL: NOT ESTABLISHED FOR PRODUCT. SEE SECTION II.

EFFECTS OF ACUTE OVEREXPOSURE: FOR PRODUCT

CONTACT WITH MOLTEN MATERIAL WILL CAUSE THERMAL BURNS.

FIRST AID:

IF ON SKIN: SHOULD MOLTEN MATERIAL STRIKE THE SKIN, IMMEDIATELY FLUSH WITH COLD MATER TO COOL AND SOLIDIFY THE MATERIAL. GET IMMEDIATE MEDICAL ATTENTION.

PRIMARY ROUTE(S) OF ENTRY:

SKIN CONTACT

SECTION VI—REACTIVITY DATA

HAZARDOUS POLYMERIZATION: CANNOT OCCUR

STABILITY: STABLE

INCOMPATIBILITY: AVOID CONTACT WITH:, STRONG OXIDIZING AGENTS.

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CONTINUED ON PAGE: 2

# Ashland Chemical Company

DIVISION OF ASHLAND OIL, INC.

MATERIAL SAFETY DATA SHEET 24-HOUR EMERGENCY TELEPHONE (606) 324-1133

P 0. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333



000006

# POLYPRO HIMONT PP65-F4-4 NT

Page: 2

# SECTION VII-SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

SMALL SPILL: SWEEP UP MATERIAL FOR DISPOSAL OR RECOVERY.

LARGE SPILL: SHOVEL MATERIAL INTO CONTAINERS. THOROUGHLY SHEEP AREA OF SPILL TO CLEAN UP ANY RESIDUAL MATERIAL.

#### WASTE DISPOSAL METHOD:

SMALL SPILL: DISPOSE OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

LARGE SPILL: DEPOSIT IN A LANDFILL IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

## SECTION \*VIII-PROTECTIVE REQUIPMENT TO BE WEED

RESPIRATORY PROTECTION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

VENTILATION: NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

PROTECTIVE GLOVES: WEAR RESISTANT GLOVES (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER).

EYE PROTECTION: WEAR SAFETY GLASSES IN COMPLIANCE WITH OSHA REGULATIONS. (CONSULT YOUR SAFETY EQUIPMENT SUPPLIER

OTHER PROTECTIVE EQUIPMENT: NORMAL WORK CLOTHING COVERING ARMS AND LEGS.

# SECTION IX-SPECIAL PRECAUTIONS OR SOTHER COMMENTS

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THIS DATASHEET MUST BE OBSERVED.

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT MARRANTED TO BE MHETHER ORIGINATING MITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES.

72-62-7820-01 MATERIAL SAFETY

# **Ashland Chemical Company**

DIVISION OF ASHLAND DIL, INC.

P. O. BOX 2219, COLUMBUS, OHIO 43216 . (614) 889-3333



24-HOUR EMERGENCY TELEPHONE (606) 324-1133

# DATA SHEET الماء المراد والأميان المراولا المراجع المتعاول المستعر فساليا مع الجدادات

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0163695

97002 (REV 1-83)

MSDS NUMBER ▶ 3.025-1

PAGE 1 OF 4

SECTION I	NAME	24 HOUR EMERGENCY	ASSISTANCE
PRODUCT POly	propylene 7326	SHELL 713-473-9461 CHEMTREC 800-424-9300	HEALTH 0
CHEMICAL/ SYNONYMS POLY	propylene, PP	HAZARD RATING	FIRE 1
CHEMICAL Ther	moplastic Polymer	LEAST SLIGHT	REACTIVITY O
SHELL CODE 456	37 C.A.S. NUMBER 9003-07-0	MODERATE HIGH EXTREME  2 3 4	

SECTION II		NGREDIE	INTS			
COMPOSITION		2,4	TOXICITY DATA			
Polypropylene 7328		100	Not Determined			
Polypropylene	>70%					
Impact Improving Polymer (containing ethylene and propylene	<30%					
Additives Acid Acceptor Antioxidants Processing Stabilizer Mold Release Agent	<1%					

SECTION III HEALTH INFORMATION
Product is categorized as practically non-toxic; however, fines may cause mechanical irritation of eyes, nose and respiratory tract.

\*45861 47272 **4B523** 

SECTION IV OCCUPATIONAL EXPOSURE LIMITS TO OSHA/PEL or ACGIH/TLV has been established.

MSDS NUMBER

3,025-1

PAGE 2 OF 4

SECTION V

EMERGENCY AND FIRST AID PROCEDURES

If any irritation occurs due to fines, get medical attention.

SECTION VI			PHYSICAL DATA	
BOILING POINT	•	N.A.	MELTING POINT 320-330	VAPOR PRESSURE N.A. (mmHg)
SHECIFIC GRAVITY (H <sub>2</sub> D=1)	•	0.901	% VOLATILE BY N.A.	VAPOR DENSITY N.A. (AIR=1)
SOLUBILITY IN WATER	•	Insoluble	EVAPORATION RATE (BUTYL ACETATE= 1)	N.A. = Not Available

APPEARANCE AND ODOR

Solid pellet; essentially odorless

SECTION VII	FIRE /	AND	<b>EXPLO</b>	SION	HAZARDS					
FLASH POINT AND METHOD USED				FLAMM	ABLE LIMITS/X	VOLUM	E IN AIR	_ \	OWER	UPPER
H.A				N.A.						
EXTINGUISHING MEDIA										

Use water fog, foam, dry chemical or CO2. Do not use a direct water stream. Avoid accumulation of water as product will float. SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS

Do not enter confined fire space without proper protective equipment including a NIOSH approved self-contained breathing apparatus. Cool fireexposed containers, surrounding equipment and structures with water.

# MUSUAL FIRE AND EXPLOSION HAZARDS

as a solid that can burn. Holded parts generally burn slowly with a tow smoke density and flaming drips. Under certain conditions can burn ith a high smoke density.

SECTION VIII	791	REACTIVITY			0163695
. [=					
STABILITY	E X STABLE	HAZARDOUS POLYMERIZA	TION P	MAY OCCUR	X WILL NOT OCC
CONDITIONS AND MATERIALS T	O AVOID				···-
Strong oxidizing	agents.				
					•
					•
AZARDOUS DECOMPOSITION P	RODUCTS				
Carbon monoxide					
organics of unkno	own cnemical	composition and	toxic	ity.	
<del></del>	<del></del>				····-
SECTION IX		EMPLOYEE PROTECTIO	N		
RESPIRATORY PROTECTION					
Not normally requ	lired.				
PROTECTIVE CLOTHING		·			
Not normally requ	iired				
not notmaity requ	11164.				
ADDITIONAL PROTECTIVE MEAS	URES				<del> </del>
Not normally requ	uireā.				
•					
SECTION X SPILL OR LEAK PROCEDURES	ENV	IRONMENTAL PROTECT	TION		
	ID OF 1188 45	dustrial vacuum o	clesno	r. Dut int	o containers
for reclaiming or				Fut lift	
WAGOT BIRRATI					
WASTE DISPOSAL		4400003 500434	<b></b>		with local
Dispose of in an	appropriate	disposal facilit	ty in	compliance	with local
	appropriate	disposal facilit	ty in	compliance	with local

SECTION XIII

# MATERIAL SAFETY DATA SHEET

MSDS NUMBER

3,025-1 PAGE 4 OF 4

SECTION XI

SPECIA	L PREC	AUTI	ONS

Tr t as a solid that can burn. Store away from oxidizing materials in a cc , dry place with adequate ventilation.

Bond and ground transfer equipment to avoid static electricity discharges.

SECTION XII	T	RANSPORTATION REQU	JIREMENTS	
<b>DEPARTMENT</b> OF	FLAMMABLE LIQUID	COMBUSTIBLE LIQUID	OXIDIZING MATERIAL  CORROSIVE MATERIAL	NON-FLAMMABLE GAS  NOT HAZARDOUS BY D.O.T. REGULATIONS
RANSPORTATION P	FLAMMABLE GAS	POISON,CLASS B	IRRITATING MATERIAL	OTHER-Specify below
D.O.T. PROPER SHIPPIN	NG NAME			
THER REQUIREMENTS				
~=				
<del></del>	<del></del>	<del></del>		

SUPPLEMENTARY HEALTH/REGULATORY INFORMATION

TRW-01932

The information contained herein is based on data considered accurate. However,no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from he inhereof.

/enc. .sumes no responsibility for injury to vendee or third versons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in his use of the material.

# **BE SAFE**

READ OUR PRODUCT SAFETY INFORMATION ...AND PASS IT ON

[PRODUCT LIABILITY LAW REQUIRES IT] John Physics

SHELL OIL COMPANY PRODUCT SAFETY AND COMPLIANCE P.O. BOX 4320 HOUSTON,TEXAS 77210

(713) 241-4819

DATE PREPARED

February 28, 1983

# BETZ LABORATURIES, INC. 4636 SOMERTON RUAD, TREVOSE, PA. 19047 BETZ MATERIAL SAFETY DATA SHEET

24 HOUR EMERGENCY TELEPHONE (HEALTH OR ACCIDENT) 1-800-877-1940

REAGENT POTASSIUM CHROMATE INDICATOR CODE 213

(PAGE 1 OF 3)

EFFECTIVE DATE COLLE-915

MASS, REG.# PRINTED: 01-31-92

REVISIONS TO SECTIONS: -; EDIT: APPENDIX

REAGENT APPLICATION . FIELD TEST REAGENT

----SECTION 1------HAZARDOUS INGREDIENTS------

INFORMATION ON PHYSICAL HAZARDS, HEALTH HAZARDS, PEL'S AND TLV'S FOR SPECIFIC REAGENT INGREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED. REFER TO SECTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. FOR MASSACHUSETTS, THE PERCENT OF HAZARDOUS INGREDIENT IN THE FORMULATION IS INDICATED BELOW.

POTASSIUM CHROMATE(CR VI)\*\*\*CAS#7789~00~6; OXIDIZER; CORROSIVE; POTENTIAL SKIN SENSITIZER; POTENTIAL KIDNEY TOXIN; SUSPECT CARCINOGEN; PEL:0 1MG/M3(CEILING)AS CR;TLV:0.05 MG/M3 AS CR. ( 11.0-15.0% )

ALTHOUGH EVIDENCE IS INCONCLUSIVE, EPA AND OSHA CONSIDER ALL CTVI COMPOUNDS POTENTIAL HUMAN CARCINOGENS, INCREASED RISK OF LUNG CANCER HAS BEEN OBSERVED IN CHROME PRODUCING, PLATING, ALLOY AND PIGMENT INDUSTRIES. RESULTS OF ANIMAL TESTS INDICATE SOME COVI COMPOUNDS MAY BE CARCINOGENIC TO MAN BY INHALATION, IT IS THEREFORE PRUDENT TO TREAT ALL CTVI COMPOUNDS AS SUSPECT CARCINOGENS AND TO MINIMIZE WORKER EXPOSURE TO DUSTS/MISTS.

----SECTION 2-----TYPICAL PHYSICAL DATA---------

PH: AS IS

(APPROX.) 8.9 ODOR: NONE

FL.PT.(DEG.F): >200 SETA(CC)

SP.GR.(70F)OR DENSITY: 1.013

VAPOR PRESSURE(mmHG): ND

VAPOR DENSITY(AIR=1): ND %SOLUBILITY(WATER): 100

VISC cps70F: ND

EVAP.RATE: (1 ETHER=1

APPEARANCE: YELLOW

PHYSICAL STATE: LIQUID

FREEZE POINT(DEG.F): ND

----SECTION 3-----REACTIVITY DATA-----

STABLE, BETZ TANK CLEAN-OUT CATEGORY 'B'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

## MATERIAL MARRY DATA SHEET (PAGE 2 OF 3)

REAGENT POPASSIUM CHROMATE (NDICATOR

ACUTE SKIN REFECTS \*\*\* PRIMARY ROUTE OF EXPOSURE

MODERATELY (RRITATING TO THE SKIN POTENTIAL SKIN SENSITIZER

ACUTE EYE EFFECTS \*\*\*

SEVERE INRITANT TO THE EYES

ACUTE RESPIRATORY EFFECTS \*\*\*

MISTS/ABROSOLS CAUSE IRRITATION TO UPPER RESPIRATORY TRACT

CHRONIC EFFECTS OF OVEREXPOSURE \*\*\*

PROLUNGED OR REPEATED OVEREXPOSURES MAY CAUSE LIVER AND KIDNEY TOXICITY; MAY INCREASE RISK OF CANCER; MAY CAUSE SKIN SENSITIZATION.

MEDICAL CONDITIONS AGGRAVATED \*\*\*

NOT KNOWN

## SYMPTOMS OF EXPOSURE \*\*\*

INHALATION MAY CAUSE IRRITATION OF RESPIRATORY TRACT; SKIN CONTACT MAY CAUSE ITCHING AND/OR REDNESS:

REMOVE CONTAMINATED CLOTHING WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT \*\*\*

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES. IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM FROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION\*\*\*

DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM.
DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ADMINISTERING SOAP SOLUTION
EMETIC, OR OTHER STANDARD METHOD IF SOAP SOLUTION IS NOT AVAILABLE.
IMMEDIATELY CONTACT A PHYSICIAN.

----SECTION 6-----SPILL, DISPOSAL AND FIRE INSTRUCTIONS-----SPILL INSTRUCTIONS\*\*\*

GENERAL-VENTILATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL. PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

SPECIFIC- SPILL RESIDUE MAY BE REDUCED WITH ACID BISULFITE SOLUTION

DISPOSAL INSTRUCTIONS\*\*\*
FOR DISPOSAL USE A COMMERCIAL WASTE TREATMENT OR DISPOSAL COMPANY
OR IN-HOUSE USE A CHROMATE REMOVAL SYSTEM IN ACCORDANCE WITH RCRA
REGULATIONS.INCINERATION OF CHROMATES WITH CHLORIDES OR CHLORINE

BEARING ORGANICS MAY BE HAZARDOUS.
WATER CONTAMINATED WITH THIS PRODUCT MAY BE SENT TO A SANITARY
SEWER TREATMENT FACILITY, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A
PERMITTED WASTE TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS(FULL FACE-PIECE TYPE), PROPER FIRE EXTINGUISHING MEDIA: FLOOD WITH WATER. USE OF CO2 OR FOAM MAY NOT BE EFFECTIVE.

#### MATERIAL SAFETY DATA SHEET (PAGE 3 OF 3)

REAGENT: POTASSIUM CHROMATE INDICATOR -----SECTION 7 ------SPECIAL PROTECTIVE EQUIPMENT------USE PROTECTIVE EQUIPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WIGHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION\*\*\* ADEQUATE VENTILATION TO MAINTAIN AIR CONTAMINANTS BELOW EXPOSURE LIMITS RECOMMENDED RESPIRATORY PROTECTION\*\*\* IF VENTILATION IS INADEQUATE OR SIGNIFICANT REAGENT EXPOSURE IS LIKELY, USE HIGH EFFICIENCY PARTICULATE CARTRIDGES RECOMMENDED SKIN PROTECTION\*\*\* RUBBER GLOVES WASH OFF AFTER EACH USE REPLACE AS NECESSARY RECOMMENDED EYE PROTECTION\*\*\* SPLASH PROOF CHEMICAL GOGGLES ----SECTION 8-----STORAGE AND HANDLING PRECAUTIONS-----STORAGE INSTRUCTIONS\*\*\* KEEP CONTAINER CLOSED WHEN NOT IN USE. DO NOT FREEZE IF FROZEN, THAW AND MIX COMPLETELY PRIOR TO USE HANDLING INSTRUCTIONS\*\*\* CONTAINS AN OXIDIZER. AVOID ALL CONTACT WITH REDUCING AGENTS, OILS, GREASES, ORGANICS AND ACIDS. DO NOT ALLOW TO DRY. THIS MEDS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD APPENDIX: REGULATORY INFORMATION THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT. ...TSCA: ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY ... REPORTABLE QUANTITY (RQ) FOR UNDILUTED PRODUCT: 7.9 GALLONS DUE TO POTASSIUM CHROMATE ...RCRA: IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: DOOT=CHROMIUM ...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE ... CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS:

THIS PRODUCT CONTAINS THESE CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE

...SARA SECTION 313 CHEMICALS: POTASSIUM CHROMATE(7789-00-6) , 11.0-15.0%; ...SARA SECTION 312 HAZARD CLASS: IMMEDIATE(ACUTE) AND DELAYED(CHRONIC)

NFPA/HMIS : HEALTH - 2 ; FIRE - 0 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B

CANCER OR REPRODUCTIVE TOXICITY: POTASSIUM CHROMATE(7789-00-6)

... SARA SECTION 302 CHEMICALS: NONE

# Company, Inc.

# U.S. DEPARTMENT OF LABOR WORKPLACE STANDARDS ADMINISTRATION BUREAU OF LABOR STANDARDS MATERIAL SAFETY DATA SHEET

	5.00 × 33
FORM ND &	HA-MINO CU LED
,3	
MDC CONTIN	<b>8</b> 0

					1.	1	
SECTION SECTIO	HI I: MAT	ERIAL AND MA	MUFACTURER IDENTIFICATION	1 212222			4.5
Frederick Gu	mm Chai	n) lenim	Inc	EMERGENCY 201-99			E NO.
CESS (NUMBER, STREET, CITY, STATE AND ZIF	CODE)	mical co.	, 1110	201-2	7.3. <del>2.4</del> 4.	142	
538 Forest S	treet	Kearny	, N.J. 07032				
CAL NAME AND SYNONYMS			TRADE NAME AND SYNO	NYMS			<del></del>
Potassium Cy	anide	····					
PRAL PANILY			FORMULA				*****
	SECT	ION II. NATAD	L KCN DOUS INGREDIENTS*				<del></del>
	3001	TLV				-	TLY
INTS, PRESERVATIVES/SOLVENTS	*	(UNITS)	ALLOYS AND METALLIC	COATINGS	150	₩.	(UNITS)
MENTS			BASE METAL	100			
7 A J OA *							
TALYST			ALLOYS				
HICLE	-+		METALLIC COATINGS				
	-	į	me included in ings		ı		
VENTS			FILLER METAL PLUS			·	
			COATING OR CORE FLUX		40.4		
DITIVES			OTHERS		1 7		
							35 77
HERS			ĺ				
		L	<u> </u>		- 4	<u> </u>	7.0
HAZARDOUS	MIXTURE	S OF OTHER L	LIQUIDS, SOLIDS, OR GASES*			* *	(UNITS)
- <u> </u>							
			Potassi	ım Cyanide		100	12.5 mg/
			• •				: :
		<del></del>					40.00
.•					1		
•		SECTION III: P	HYSICAL DATA				
ING POINT (OF)	أوريبي ومستنب	N.A.	SPECIFIC GRAVITY (H20 = 1)				N.A.
ING POINT ("F)		N.A.	•				
OR PRESSURE (mm Hg.)		N.A.	PERCENT VOLATILE BY VOLUME (%)				N.A.
	<del></del>	1	EVAPORATION RATE				<del> </del>
POR DENSITY (AIR = 1)		N.A.	(=1)				N.A.
		<del> </del>	- 4				<del></del>
UBILITY IN WATER		Complete					
SARANOS AND ODOR White operatel	line e	olid Fo	int almond odor.				
	ECTION I	V: FIRE AND E	XPLOSION HAZARD DATA				Uel
None			FLAMMABLE LIMITS	<u> </u>	Lel	-+	
TINGUISHING MEDIA	<del></del>	<del></del>					
N.A.					TI	RW	-01936
CIAL FIRE FIGHTING PROCEDURES				1.21 0	_		
Do n	ot use	water to	extinguish fire in via	cinity of p	pota	esi(	ım cyanic
							·
THAT FIRE AND EXPLOSION HAZARDS CON	tact w	ith acids	releases highly toxic	& flammab	le b	ydr	ocyanic 1
						oid	-000

D ENIT VALUE			2FC1	UN	V: HEALTH HAZARD DAT	TA			
OTC OF OVEREXPOS	12.5 mg/M <sup>3</sup>	•				<del></del>			
		u or	ingest	io	on may cause asph	yxiation.			
					an immediately.				
cloth and h	old under nos	e fo	r 15 se	CO	ond intervals. R	epeat as necessi	ery using	Jew 1	emy1
MICLICO GVC	ily 5 mindes.	1911	en cons	,,,	ous, give sait "	acer co mode	volitering,		-
								,.	1 .,, 2
<u> </u>			SEC	TIO	N VI: REACTIVITY DATA				
	UNSTABLE				TO AVOID		1		
STABILITY		+-	<del> </del> -		<del></del>	<del></del>	<del></del>		
	STABLE	X	<u> </u>				·		
NCOMPATIBILITY (MATE			ot stor		with oxidizers.	DO NOT STORE W	ITH ACIDS.	Re.	leases
22ARDOUS DECOMPOSI	TION PRODUCTS	-	_		ide gas when rea	cted with scide	·	No.	
	<del></del>	·	- <u>-</u>		CONDITIONS TO AVOID		<del>-</del>		
RAZARDOUS	MAY OC	CUR				• 2		` ———	
POLYMERIZATION	WILLNO	OT OC	CUR	X					
								1.	
	· · · · · · · · · · · · · · · · · · ·		SECTION	VII	: SPILL OR LEAK PROCE	DURES		,	
S TO BE TAKEN IN			SED OR SP	ነርር	ED		*. •		
					ypochlorite solu not get on skin		cyanide.		
	. 100.,			_					
								1. A	
WASTE DISPOSAL METHO	D Treat to	dest	roy cy	ni	de. Dump to dra	in. Avoid cont	act with a	cids.	•
	<u> </u>							<del></del>	
					<del></del>		·		
•									· · · · · · · · · · · · · · · · · · ·
		ŞE	CTION VII	): SI	PECIAL PROTECTION INF	ORMATION			
SPIRATORY PROTECT	ton (specify Type	irat	or wher	n h	andling powder.			n .	
	LOCAL EXHAUST	A doa	unto vo	\n+	ilation	SPECIAL	mask for	AMA T	dency
PENTILATION	MECHANICAL (GEN			3110	.118(10))	OTHER	maok Tot	- Chier	301107
<u> </u>	<u></u>				EYE PROTEC	TION			·
PROTECTIVE GLOVES	Rubber or neop	rene			ETE PROTEC	Goggles			·
THER PROTECTIVE EQ	UIPMENT Rubber	Or	neoprer	ne	aprons		_: _ <del></del> -		
			-		IX: SPECIAL PRECAUTION	DNS			
PRECAUTIONS TO BE TA	KEN IN HANDLING	IND ST	ORING		not store near		y. Avoid	dema	aina
•					ontainer.		<u></u>		
THER PRECAUTIONS						0908-3315	1	TRV	V-01937
<u>، ،</u>	22 21	,					<del></del>		
Thoma	omas M. Kosor		Chemist	r	December 7, 1	<u>.9</u> 79			
PREPARED BY	iulias ri. Musuf	ck,	CHOIIT2	·					

# **Material Safety Data Sheet**

May be used to comply with OSHA's Hazard Communication Standard, 29CFR 1910. 1200. Standard must be consulted for specific requirements.

STARRETT CLEANER

QUICK IDENTIFIER Common Name: (used on label and list)

DEPT 246 TOOL ROOM RECD. 3/20/90

SECTION 1 -					
fame SURRY CHEMICALS, INC.					<b>'.</b>
Miroso P. O. Box 1447, 241 Hickory My, State, and ZIP Mount Airy, NC 27030	y Street	Emergency Telephone No. Other Information Calls	(919)	786-460	? <b>?</b>
ignature of Person asponsible for Preparation (Optional)		Date Prepared	4-5-89		•
SECTION 2 – HAZARDOUS INGREDIES	NTS/IDENTITY			<del></del>	
lazardous Component(a) (chemical & common name(a))	OSHA PEL	ACGIH TLV	Other Exposur		CAS tional) NO.
onionic Surfactants		N/A		<u> </u>	68131-40
ipropylene glycol monomethyl	ether	100 ppi	n.	2	34590-94
otassium Hydroxide		N/A		.5	1310-58-
DTA		N/A			64-02-8
ye	······	N/A		.001	2610-10-
ater				Bal	ance
			1		
	VA DA COMPONICIONI CO				
SECTION 3 - PHYSICAL & CHEMICAL CE	0		Vapor Pressure	timm Hat 1 . C	
oding 212 d.F.			Vapor Pressure	(rom Hg) 1 . C	
colling 212 d.F.  Vapor Density (Air = 1)	Specific Gravity (H <sub>1</sub> O=		Vapor Pressure	r (roum Hag) 1 . C	
olking 212 d.F.  Vapor Density (Air = 1) 1  ohability Wester Disperses	Specific Gravity (H,O=	1.00	Vapor Pressure	r (rom Hg) 1 . C	
oliking 212 d.F.  Vapor Density (Akr = 1) 1  okublikty Disperses  ppearance and Odor Clear chemical	Specific Gravity (H <sub>4</sub> O= . O Reactivity in Water Melting Point	N/A	Vapor Pressure	(rom Hg) 1 . C	
oliking 212 d.F.  Vapor Density (Air = 1) 1  obtability   Disperses  ppearance   Clear chemical  SECTION 4 - FIRE & EXPLOSION DAT	Specific Gravity (H <sub>4</sub> O= . O Reactivity in Water Melting Point	N/A N/A	Vapor Prossure UEL Upper		
Vapor Density (Air = 1)  Obtability a Water Disperses  Operation Clear chemical  SECTION 4 - FIRE & EXPLOSION DAT  Tash Method Object N/A F. C. Used  Auto-Ignition N/A Extinguisher	Specific Gravity (H <sub>4</sub> O= . 0  Reactivity in Water  Melting Point  A  Flammable Limits in Air % by Volume Love	N/A N/A	Pressure UEL Upper	o (rom Hg) 1.0	
Colling ount 212 d.F.  Vapor Density (Air = 1) 1  Columbility a Water Disperses  Appearance and Odor Clear Chemical  SECTION 4 - FIRE & EXPLOSION DAT  Clash Ownt N/A F. C. Used	Specific Gravity (H <sub>4</sub> O= . 0  Reactivity in Water  Melting Point  A  Flammable Limits in Air % by Volume Love	N/A N/A N/A	Pressure UEL Upper		
Vapor Density (Air = 1)  Columbility a Wester Disperses  Appearance Clear chemical  SECTION 4 - FIRE & EXPLOSION DAT  Tash Method Used  Auto-Ignition N/A Extinguisher Media	Specific Gravity (H <sub>4</sub> O= . 0  Reactivity in Water  Melting Point  A  Flammable Limits in Air % by Volume Love	N/A N/A N/A	Pressure UEL Upper		
Vapor Density (Air = 1)  Columbility a Wester Disperses  Appearance Clear chemical  SECTION 4 - FIRE & EXPLOSION DAT  Tash Method Used  Auto-Ignition N/A Extinguisher  Auto-Ignition Procedures NONE KNOWN  James of Fire and	Specific Gravity (H <sub>4</sub> O= . 0  Reactivity in Water  Melting Point  A  Flammable Limits in Air % by Volume Love	N/A N/A N/A	Pressure UEL Upper		

Sublisty Unstable Conditions Stable XX to Avoid NONE KNOWN    Incompatability   Unstable   Conditions   STRONG ACIDS, OXIDING AGENTS
Hazardous   Decomposition Products   Hazardous   May Occur   Conditions   NONE KNOWN
Hazardous Decomposition Products  Hazardous Decomposition Products  Hazardous May Occur C Conditions Polymerization Will Not Occur X to Avoid NONE KNOWN  SECTION 6 - HEALTH HAZARDS  1. Acute None expected when used as directed. Detergent action causes skin dryness and symptoms of Exposure NONE KNOWN  Medical Conditions Generally Aggravated by Exposure NONE KNOWN  Chemical Listed as Carcinogen Program No X  No X  No X  None Known.  1. Inhalation None known.  2. Chronic None known  None known  1. Inhalation None known.  2. Eyes Flush with water, get medical attention.  3. Skin No wash with water.  4. Insention
Hazardous Products  Hazardous May Occur C Conditions Polymerization Will Not Occur C Conditions  SECTION 6 - HEALTH HAZARDS  1. Acute 2. Chronic None expected when used as directed. Detergent action causes skin dryness and irritation.  Signs and Symptoms of Exposure NONE KNOWN irritation.  Medical Conditions Generally Aggravated by Exposure None KNOWN  Chemical Listed as Carcinogen Program No X Monographs No X OSHA Yes No X No
Hazardous May Occur Conditions NONE KNOWN  SECTION 6 - HEALTH HAZARDS  1. Acute 2. Chronic None expected when used as directed. Detergent action causes skin dryness and Symptoms of Exposure NONE KNOWN irritation.  Medical Conditions Generally Aggravated by Exposure NONE KNOWN  Chemical Listed as Carcinogen Program No Monographs No Monog
SECTION 6 - HEALTH HAZARDS  1. Acute None expected when used as directed. Detergent action causes skin dryness and signs and symptoms of Exposure NONE KNOWN  Medical Conditions Generally Aggravated by Exposure  NONE KNOWN  Chemical Listed as Carcinogen Program No X  Emergency and Free Aid Procedures  See below  ROUTES F  1. Inhalation None known.  2. Chronic None known  1. A.R.C. Yes
1. Acute None expected when used as directed. Detergent action causes skin dryness and Signa and Symptoms of Exposure NONE KNOWN  Medical Conditions Generally Aggravated by Exposure  NONE KNOWN  Chemical Listed as Cercinogen Program No. 2  Monographs No. 2  Monographs No. 2  Monographs No. 2  I.A.R.C. Yes   OSHA Yes   No. 2  Monographs No. 2  Monographs No. 2  I.Inhalation None known.  2. Eyes Plush with water, get medical attention.  3. Skin Wash with water.  4. Inspection
1. Acute None expected when used as directed. Detergent action causes skin dryness and Signa and Symptoms of Exposure NONE KNOWN  Medical Conditions Generally Aggravated by Exposure  NONE KNOWN  Chemical Listed as Carcinogen Program National Toxicology Yes Monographs No X  Emergency and Prost Aid Procedures  See below  1. Inhalation None known.  2. Chronic None known.  1. Inhalation None known.  2. Eyes Plush with water, get medical attention.  3. Skin Wash with water.  4. Inspection
None expected when used as directed. Detergent action causes skin dryness and Signs and Symptoms of Exposure NONE KNOWN  Medical Conditions Generally Aggravated by Exposure  NONE KNOWN  Chemical Listed as Carcinogen National Toxicology Yes
Medical Conditions Generally Aggravated by Exposure  NONE KNOWN  Chemical Listed as Carcinogen or Potential Carcinogen Program No X  Monographs No X  I. Inhalation None known.  2. Eyes Flush with water, get medical attention.  3. Skin Wash with water.  4. Investion
Chemical Listed as Carcinogen National Toxicology Yes   I.A.R.C. Yes   OSHA Yes   OSHA Yes   Monographs No   No   No   No   No   No   No   No
Chemical Listed as Carcinogen National Toxicology Yes
Emergency and Protection  Program No No Monographs No
Emergency and Procedures See below  1. inhalation None known. 2. Eyes Flush with water, get medical attention. 3. Skin Wash with water. 4. Ingration
ROUTES  None known.  2. Eyes Flush with water, get medical attention.  3. Skin Wash with water.  4. Inspection
ROUTES  Properties  None known.  2. Eyes Flush with water, get medical attention.  3. Skin Wash with water.  4. Inspection
ROUTES Flush with water, get medical attention.  ANTRY Skin Wash with water.  Alpression
ANTRY LINE With water, get medical attention.  A Skin Wash with water.
4. Ingration
/ Get medical attention.
SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES  Precautions to be Taken
in Handling and Storage Handle with due care.
Other Precautions NONE KNOWN
Steps to be Taken in Case Material is Released or Spilled Small spills - flush to nearest chemical sewer after
neutralization with 6N HCL or vinegar. Large spills: absorb on suitable
Waste Disposal Mothods (Consult federal, state, and local regulations) material, scoop up and neutralizr with 6N HCL
or vinegar. Disposal must be in accordance with local, state and fed. regulation
SECTION 8 – SPECIAL PROTECTION INFORMATION/CONTROL MEASURES
Respiratory Protection (Specify Type)
Ventilation Local Machanical Special Other
Exhaust (General) Required if mist exceeds 1 ppm as KOH  Protective NONE REQUIRED Protection CHEMICAL SAFETY GLASSES
Jther Protective Clothing or Equipment NONE REQUIRED
Work/Hygienic Practices TRW=019
0908-3317 IMPORTANT

# IFIZ U BORATORIES, INC. 4636 SUMERION ROAD, TREVOSE, PA 19047 BETZ HATERIAL SAFETY DATA SHEET

24 - COPT EMERGENCY (FECRHOUSE (HEALTH OR ACCIDENT) 1-300-877-1940

(PAGE 1 OF 3)

REAGENT POTABBIUM TODIDE-TODATE

CODE 237

EFFECTIVE DATE 02-16-91

网络克克 解光线 棒

PRINTED: 01-31-92

REVISIONS TO SECTIONS: -; EDIT. APPENDIX

REAGENT APPLICATION FIELD FEST REAGENT

INFORMATION ON POYSTOAL HAZARDS, HEALTH HAZARDS, PELIS AND TLV'S FOR SPECIFIC REAGENT AMBREDIENTS AS REQUIRED BY THE OSHA HAZARD COMMUNICATIONS STANDARD IS LISTED FREED OF SUCTION 4 (PAGE 2) FOR OUR ASSESSMENT OF THE POTENTIAL ACUTE AND CHRONIC HAZARDS OF THIS FORMULATION. FOR MASSACHUSETTS, THE PERCENT OF HAZARDOUS INGREDIENT IN THE FORMULATION IS INDICATED BELOW.

THIS RECEIVED IS NOT HAZARDOUS AS DEFINED BY OSHA REGULATIONS.

----SECTION 2-----TYPICAL PHYSICAL DATA-----

PH: AS IS

(APPROX.) 10.5 ODOR: NONE

FL.PT. (DEG F): >200 SETA(CC) SP.GR. (70F)OR DENSITY: 1.0 VAPOR DENSITY(AIR=1): ND

VAPOR PRESSURE(mmHG): ND VISC cps70F: ND

%SOLUBILITY(WATER): 100

EVAP RATE: (1 ETHER=1

APPEARANCE: COLORLESS

PHYSICAL STATE: LIQUID

FREEZE POINT(DEG.F): ND

----SECTION 3-----REACTIVITY DATA----

STABLE, BETZ TANK CLEAN-OUT CATEGORY 'A'

THERMAL DECOMPOSITION (DESTRUCTIVE FIRES) YIELDS ELEMENTAL OXIDES.

# MATIRIAL HARBON BATA RIBET HRAGE & OF 3)

REAGENT PICTO CHA EUCIPE FREDATE

ACUTE SKIN SERECTS WIN PRIMARY ROUTE OF EXPOSURE

SLIGHTLE PARTALING TO THE WAIN

ACUTE EVE STRECTS FAR

MODERAISLY (PROT-TING TO THE EVES

ACUTE RESMICATORY SEFECTS \*1\*

MISTS ASSOCIATE MAY CAUSE CARITATION TO UPPER RESPIRATORY TRACT

CHRONIC EDS.CAS OF EVEREXPORTEREXE

NO EVIDENCE OF POTENTIAL CHRONIC EFFECTS

MEDICAL CONDITIONS AGGRAVATED FER

NOT RMOUNT

SYMPTOMS OF EXPOSURE \*\*\*

MAY CAUSE EYE, SKIN, AND/OR RESPIRATORY TRACT IRRITATION.

REMOVE CONTAMINATED CLOTHING WASH EXPOSED AREA WITH A LARGE QUANTITY OF SOAP SOLUTION OR WATER FOR 15 MINUTES

EYE CONTACT : EX

IMMEDIATELY FLUSH EYES WITH WATER FOR 15 MINUTES IMMEDIATELY CONTACT A PHYSICIAN FOR ADDITIONAL TREATMENT

INHALATION EXPOSURE\*\*\*

REMOVE VICTIM TROM CONTAMINATED AREA TO FRESH AIR.APPLY APPROPRIATE FIRST AID TREATMENT AS NECESSARY

INGESTION \* \* \*

GENERAL-DO NOT FEED ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSIVE VICTIM SPECIFIC- DILUTE CONTENTS OF STOMACH. INDUCE VOMITING BY ONE OF THE STANDARD METHODS. IMMEDIATELY CONTACT A PHYSICIAN

GENERAL-VENITLATE AREA, USE SPECIFIED PROTECTIVE EQUIPMENT. CONTAIN AND ABSORB ON ABSORBENT MATERIAL.PLACE IN WASTE DISPOSAL CONTAINER. THE WASTE CHARACTERISTICS OF THE ABSORBED MATERIAL, OR ANY CONTAMINATED SOIL, SHOULD BE DETERMINED IN ACCORDANCE WITH RCRA REGULATIONS.

SPECIFIC- FLUSH AREA WITH WATER. WET AREA MAY BE SLIPPERY. SPREAD SAND/GRIT.

DISPOSAL INSTRUCTIONS\*\*\*

GENERAL-WATER CONTAMINATED WITH THIS REAGENT MAY BE SENT TO A SANITARY SEWER, IN ACCORDANCE WITH ANY LOCAL AGREEMENT, A TREATMENT FACILITY OR DISCHARGED UNDER A NPDES PERMIT

REAGENT(AS IS)- INCINERATE OR BURY IN APPROVED LANDFILL

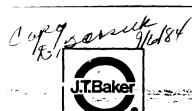
FIRE EXTINGUISHING INSTRUCTIONS\*\*\*

FIREFIGHTERS SHOULD WEAR POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS (FULL FACE-PIECE TYPE). PROPER FIRE EXTINGUISHING MEDIA: DRY CHEMICAL, CARBON DIOXIDE, FOAM OR WATER

# MATERIA: JAPETY DATA SHEET (PAGE 3 OF 3)

REAGENT : 100 ASSIUM TODIDE-TODATE

USE PROTECTIVE FOUTPMENT IN ACCORDANCE WITH 29CFR SECTION 1910.132-134. USE RESPIRATORS WITHIN USE LIMITATIONS OR ELSE USE SUPPLIED AIR RESPIRATORS. VENTILATION PROTECTION \*\*\* ADEQUATE VENTILATION RECOMMENDED RESPIRATORY PROTECTION\*\*\* IF VENCTION IS INADEQUATE OR SIGNIFICANT REAGENT EXPOSURE IS LIKELY. USE A RESERVATOR WITH DUSTUMIST FILLIERS. RECOMMENDED SHIN PROTECTION\*\*\* RUBSER GLOVES WASH DEE AFTER EACH USE REPLACE AS NECESSARY RECOMMENSES EVE PROTECTION\*\*\* SPLASH PAROF CHEMICAL GOSGLES ----SECTION 3------STORAGE AND HANDLING PRECAUTIONS--------STORAGE INSTRUCTIONS \*\* KEEP CONTAINER CLOSED WHEN NOT IN USE DO NOT FREEZELIF PROZEN, THAW AND MIX COMPLETELY PRIOR TO USE HANDLING INSTRUCTIONS\*\*\* NORMAL CHEMICAL HANDLING THIS MESS WAS WRITTEN TO COMPLY WITH THE OSHA HAZARD COMMUNICATION STANDARD APPENDIX: REGULATORY INFORMATION THE CONTENT OF THIS APPENDIX REPRESENTS INFORMATION KNOWN TO BETZ ON THE EFFECTIVE DATE OF THIS MSDS. THIS INFORMATION IS BELIEVED TO BE ACCURATE. ANY CHANGES IN REGULATIONS WILL RESULT IN UPDATED VERSIONS OF THIS DOCUMENT. TILITSCALE ALL COMPONENTS OF THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY ...REPORTABLE QUANTITY(RQ) FOR UNDILUTED PRODUCT: NOT APPLICABLE ...RCRA. IF THIS PRODUCT IS DISCARDED AS A WASTE, THE RCRA HAZARDOUS WASTE IDENTIFICATION NUMBER IS: NOT APPLICABLE ...DOT HAZARD/UN#/ER GUIDE# IS: NOT APPLICABLE ...CALIFORNIA SAFE DRINKING WATER ACT (PROPOSITION 65) MATERIALS: NONE ... SARA SECTION 302 CHEMICALS: NONE ... SARA SECTION 313 CHEMICALS: NONE ... SARA SECTION 312 HAZARD CLASS: PRODUCT IS NONHAZARDOUS UNDER SECTION 311/312 NFPA/HMIS HEALTH - 1 ; FIRE - 0 ; REACTIVITY - 0 ; SPECIAL - NONE ; PE - B



J. T. Baker Chemical Co., 222 Red School Lane, Phillipsburg, N.J. 08865

SECTION I . IDEN	NTIFICATION OF PRODUCT				
CHEMICAL NAME	FORMULA				
Potassium Iodide	KI				
SYNONYM OR CROSS REFERENCE	CAS NO: 7681-11-0				
SECTION II . HA	AZARDOUS INGREDIENTS:				
MATERIAL	NATURE OF HAZARD				
SECTION I	II . PHYSICAL DATA.				
BOILING POINT 1330°C.	MELTING POINT 686°C:				
VAPOR PRESSURE	SPECIFIC GRAVITY 3.13				
VAPOR DENSITY (AIR=1)	PERCENT VOLATILE BY VOLUME (%)				
WATER SOLUBILITY Soluble	EVAPORATION RATE (= 1)				
APPEARANCE Colorless or white cubical crystals,	granules or powder				
SECTION IV. FIRE A	ND EXPLOSION HAZARD DATA				
FLASH POINT (method used)	FLAMMABLE LIMITS Lower Uppe				
FIRE EXTINGUISHING MEDIA	· · · · · · · · · · · · · · · · · · ·				
SPECIAL FIRE-FIGHTING PROCEDURES					
UNUSUAL FIRE AND EXPLOSION HAZARD	<u> </u>				
SECTION	V. HEALTH HAZARD				
THRESHOLD LIMIT VALUE orl-mus LDLO: 1862 mg/kg					
HEALTH HAZARDS Harmful if swallowed					

STABLE X  INCOMPATABILITY (materials to avoid)  Alkaloidal salts, chloral hydrate, metallic salts.  HAZARDOUS DECOMPOSITION PRODUCTS  HAZARDOUS MAY OCCUR CONDITIONS TO AVOID  WILL NOT OCCUR X  SECTION VII - SPILL AND DISPOSAL PROCEDURES  SPILLS  Carefully sweep up and remove, Flush spill area with water.  DISPOSAL  Dispose at a landfill site if local environmental regulations permit.  SECTION VIII - PROTECTION INFORMATION  RESPIRATORY PROTECTION (specify type)  Use respiratory protection if dusts are involved.  VENTILATION  LOCAL SPECIAL  X  MECHANICAL (general)  X  MECHANICAL (general)  TOTHER PROTECTIVE GLOVES  Rubber gloves  Safety glasses  OTHER  APPROVECTIVE GUIPMENT  Approved protective work clothes.  SECTION IX. HANDLING AND STORAGE PRECAUTIONS  STORAGE & HANDLING  STORAGE & HANDLING  STORAGE & HANDLING  SECTION X. MISCELLANEOUS INFORMATION	STABILITY		UNSTABLE		CONDIT	IONS TO AVOID		ar chipman Constant
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The information provided in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the users responsibility to determine the suitability of this information for the adoption of some necessary. We reserve the right to revise Material Safety Data Sheets from time to time as new technical informations the responsibility to contact the company to make sure that the sheet is the latest one issued.

Revision No. & Date Issued: \_

Manager, Quality Assurance

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MATERIAL SAFETY CATA SHEET
                                  PRIVARATION DATE ..... SCT 27. 87
   E4 SCIENCE
   A DIVISION OF EM INDUSTRIES
   111 WOODCREST
                                   IMPORMATION, PHONE NUMBER .:
                                  (600) 354-3100
   CHERRY HILL, N.J. 08034-0395
                                  CHEMINED EMERGENCY NUMBER:
                                   1-800-424-9300
                                              MERA HAZARD RATINGS
                                    12ALTH .... 2
                                                      FLAMMADILITY ...: 0
                                                      SPECIAL HAZARDS .: OXY
                                   1 WHACTIVITY : 0
                       SECTION I - GENERAL INFORMATION
     CATALOS YUNDER(S):
                          241520
                                  2X1521
                                             PX1525
                                                      5045
     CHEMICAL NAME ...: POPU
     TRADE MAME..... NITRATE OF PUTASH: SALTPETER
     C.A.S. HUMSER...: 7757-79-1
     CHEMICAL FAMILY ..: IMPRIGANIC SALT
     FURMULA .... KIN3
     MULEQULAR WEIGHT .: 101.11
     AVM : BMAL DWIRTHS TOO
     DOT NUABER .... 11/A
                     SECTION II - HAZARDOUS INGREDIENTS
     -NUNE OTHER THAN SPECIFIED PRODUCT
                         SECTION III- PHYSICAL DATA
     EDILING PRINT (C 760 MM HG) .: 400C DE
     SPECIFIC GRAVITY(H-2.0 = 1) ---- 2-11
                                          200
     VAPOR PRESSURE .. (MM HG) .... N/A
     PERCENT VOLATILE BY VOL (%) ..: N/A
     VAPOR DENSITY (AIR=1) ....: Y/A
     EVAPORATION RATE (BUAC=1) ....: M/A
     SOLUBILITY IN MATER (%)..... 26
     APPEARANCE AND ODOR ..... HHITE CRYSTALLINE
        ODORLESS PUNDER
                     SECTION IV - FIRE & EXPLOSION HAZARD DATA
SFLASH POINT (F)
     FLAMMABLE LIMITS LEL % : N/A
     FLAMMABLE EMITS UEL % .: N/A
     EXTINGUISH MEDIA ....
        USE ANY SUITABLE FOR ADJACENT MATERIAL
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WEAR SELF-CONTAINED REATHING APPARATUS FIRE FIGHTING PROC. .... THERMAL DECOMPOSITION PRODUCTS HIGHLY TOXIC FUMES FIRE & EXPL. HAZARDS ...: -DANGEROUS FIRE AND EXPLOSION HAZAND WHEN SHOCKED OR MEATED

SECTION V - MEALTH HAZARD HATA (ACUTE AMD CHROMIC) ACGIH TLY/DSHA PEL (ThA) .....: & POL: NOME ESTABLISHED TOXICITY DATA.....

-URL-RAT LOSD: 3750 MU/KG

SYMPTOMS OF EXPOSURE .....: HINGESTION OF LARGE NUANTITIES MAY CAUSE VIOLENT GASTROENTERITIS PROLONGED EXPOSURE TO SMALL AWOUNTS MAY CAUSE ANEMIA.

AETHEMOCLDPINENIA. NEPHRITIS MAY BE IRPITATING ON CONTACT WITH SKIN, EYES OR MUCOUS MEMBRANES

\*SUPALIAVA TOM STAC :9XP YE CHTAVARDDA \*OMOO LACIDEN ROUTES OF ENTRY...... INHALATION, INGESTION OR SKIN CONTACT. CARCINDGENICITY...... SEE COMMENTS, SECTION Y; IF NO INFORM-ATION APPEARS: THE MATERIAL IS NOT LISTED AS A CANCER CAUSING AGENT.

EMERGENCY FIRST AID .....:

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREMPOSURE SKIN: WASH THOROUGHLY WITH SOAP AND WATER

EYES: IMMEDIATELY FLUSH THOROUGHLY WITH LARGE AMOUNTS OF WATER INHALATION: REMOVE TO FRESH AIR: GIVE ARTIFICIAL RESPIRATION IF BREATHING HAS STOPPED

INGESTION: IF CONSCIOUS, INDUCE VOMITING

SECTION VI - REACTIVITY DATA

STABILITY .... YES CONDITIONS TO AVOID ....:

HAZARUGUS DECOMPOSITION ..: -NOX+ K20

-MAY CAUSE FIRE, EXPLOSION ON CONTACT WITH ORGANIC MATERIALS AVOID HEAT, CONTACT WITH COMBUSTIBLE MATTER MATERIALS TO AVOID ..... ( ) WATER ( ) ACIDS ( ) BASES ( ) CORRUSIVES ( ) DXIDIZERS (X) OTHER (SPECIFY)-REDUCING AGENTS, ORGANIC MATERIAL HAZARDOUS POLYMERIZATION .: DATA NOT AVAILABLE.

SECTION VII - ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE:

-TAKE UP CONTAINERIZE FOR PROPER DISPOSAL
WASTE DISPUSE TO BE PERFORMED IN COMPLIANCE WITH ALL CURRENT LOCAL. CONTAINERIZE FOR PROPER DISPOSAL STATE AND FEDERAL' REGULATIONS.

SECTION VIII - SPECIAL PROTECTION INFORMATION VENTILATION, RESPIRATORY PROTECTION, PROTECTIVE CLOTHING, EYE PROTECTION: -MATERIAL SHOULD BE HANDLED OR TRANSFERRED IN AN APPROVED FUME HOOD OR WITH ADEQUATE VENTILATION

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PROTECTIVE GLOVES (NEOPRENE) PVC OR EQUIVALENT) SHOULD BE WORN TO PREVENT SKIN CONTACT
SAFETY GLASSES WITH SIDE SHIELDS SHOULD BE WORN AT ALL TIMES

SECTION IX - SPECIAL PROTECTION INFORMATION

HANDLING & STORAGE ....:

-KEEP CONTAINER TIGHTLY CLOSED

STORE IN A COOL, DRY AREA

DO NOT BREATHE DUST

DU NOT GET IN EYES

AVOID PROLONGED OR REPEATED SKIN CONTACT

DO NOT TAKE INTERNALLY

WORK/HYGIENIC PRACTICES: WASH THOROUGHLY AFTER HANDLING. DO NOT TAKE
INTERNALLY. EYE WASH AND SAFETY EQUIPMENT SHOULD BE READILY AVAILABLE.

SECTION X - OTHER INFORMATION

COMMENTS ......

-NEPA CAUTIONS: THIS MATERIAL IS AM OXIDIZER
TESTS ON LABORATORY AGENALS INDICATE MATERIAL MAY
PRODUCE ADVERSE MUTAGENIC AND REPRODUCTIVE EFFECTS

REV. 12/86

REVISION HISTORY.....: 11/01/33, N/A OCT 27, \*87

N/A = NOT AVAILABLE:

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MAIEKIAL SAFEIT VAIA STEEL										
Form similar to O.S.H.A - 20										
		SECTI	ON I							
MANUFACTURER'S NAME EMERGENCY TELEPHONE										
TECHNIC, INC. (401) 781-6100										
ADDRESS (Number, Street, City, State, A One Spectacle Street, Cra	ND ZI	P Cope )	ode Island 02910			-				
CHEMICAL NAME AND SYNONYMS	1150	.011 141	TRADE NAME AND S	YNONYMS						
Potassium Silver Cyanide		T:	POTASSIUM :							
Cyanide Complex			Potassium	Silver Cy.	anic	ie				
SECTION I	1 -	HAZAR	DOUS INGREDIENTS							
PAINTS, PRESERVATIVES, & SOLVENTS	*	TLV (UNITS)	ALLOYS AND METALLIC	COATINGS	*	TLV (UNITS)				
PIGMENTS			BASE METAL							
CATALYST			ALLOYS							
VEHICLE			METALLIC COATINGS							
SOLVENTS										
ADDITIVES			OTHERS							
OTHERS			FILLER METAL PLUS COATING OR CORE FI	LUX		TLV				
HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES										
Complexed Cyanide										
SECTI		111 -	PHYSICAL DATA		-					
BOILING POINT (OF.)	1	A.	<u> </u>	)	T <sub>N</sub>	I. A.				
VAPOR PRESSURE (MM Hg.)	t	Α.	PERCENT VOLATILE BY VOLUME (\$)	<del></del>		I. A.				
VAPOR DENSITY (AIR =1)	1	Α.	EVAPORATION RATE							
SOLUBILITY IN WATER	1		PH							
APPEARANCE AND ODOR White powder; cyanide odor										
- wazec powac	<u>+ /                                    </u>		<u> </u>							
	FII		EXPLOSION HAZARD	DATA	<b>,</b>					
FLASH POINT (METHOD USED) None		F	LAMMABLE LIMITS	LEI	_	UEI				
EXTINGUISHING MEDIA Water										
SPECIAL FIRE FIGHTING PROCEDURES	ne									
						04040				
UNUSUAL FIRE AND EXPLOSION HAZARDS N	one			TR	W-	01948				

·		SEC	TION V -	HEAL	TH HAZARD	DATA
THRESHOLD LIMIT		10 ppm	as hydr	ocvan	ic gas when	n mixed with strong acids.
EFFECTS OF OVER	XPOSU	RE				e, vomiting to finally
unconscio	niigne		,			
EMERGENCY AND F				<u> </u>	-	a·
<u> </u>						Give prompt treatment.
Maintain				ister	amyl nitri	ite. Follow instructions
for cyan	ide p	oisonin	ıg.			
<u> </u>		<del></del>				
STABILITY	T				ACTIVITY D	AIA
312012111	UNST	ABLE		- TOR		
	STABLE X DO NOT mix with strong acids.					strong acids.
INCOMPATABILITY (MATERIALS TO AVOID) Strong acids						
HAZARDOUS DECOME	POSITIO	ON PRODUCT	s HCN (h	vdroc	yanic gas)	
HAZARDOUS		MAY OCCUR			CONDITIONS TO	AVOID
POLYMERIZATION		WILL NOT	OCCUR	х	DO NOT mi	ix with strong acids.
l				_	OR LEAK PR	OCEDURES
STEPS TO BE TAKE	EN IN (	CASE MATER	IAL IS RELE	ASED OR	SPILLED	
Collect a	and s	end to	Technic	for r	efining - o	contains silver.
					<del> </del>	
WASTE DISPOSAL P	ETHOD					
		• • • • • • • • • • • • • • • • • • •		<b></b>		1 1 . 1 . 2
Contains	comp	otexed c	yanıde.	Trea	t per loca.	l regulations.
		<del></del>				
	SECT	ON VIII	- SPEC	IAI PE	OTECTION I	NFORMATION
RESPIRATORY PROT			TYPE)			
VENTILATION	LOCAL	EXHAUST		tiona	<u>T</u>	ISPECIAL
1 L		NICAL (GEN	Yes			OTHER
PROTECTIVE GLOVE		- TOTAL TOTAL	Yes	3	EYE PROTECTION	
		Yes	·· <del></del>		ETE PROTECTION	Yes
OTHER PROTECTIVE	EQUII	PMENT NO	one	······································		
	<del></del>	SECT	ION IX -	SPEC	IAL PRECAUT	TIONS
PRECAUTIONS TO F	E TAK					
PRECAUTIONS TO E Store in OTHER PRECAUTION		dry a	area away	from	strong ac	ids.
	<del></del>					
		<del></del>				
DATE: M	arch	1984			DIVISION:	
					CICNATURE.	
-					SIGNATURE:	TRW-01949

## U.S. DEPARTMENT OF LABOR

WAGE AND LABOR STANDARDS ADMINISTRATION
Bureau of Labor Standards

# MATERIAL SAFETY DATA SHEET

		SECT	ION I				·		
MANUFACTURER'S NAME Pfizer Chemicals Division				I MERGENCY T	ELEPHONE, NO	<i>j.</i>			
Attioner Sambie State State and All La	N.Y.	. 1001		·	, 1				
235 E. 42nd St., New York, CHARLA NAME AND SYNDOWNS Rochelle Salt, NF, FCC	_11.7 _1.3		THADE N	Lum Sodit	NYMS		NF J		
CHIMICAL FAMILY			LORMULA			<u>. a . e</u>			
Aliphatic			KNACA	11,0, 411,	2		NE_		
SECTION II HAZARDOUS INGREDIENTS									
PAINTS, PRESERVATIVES, & SOLVENTS	٠,	TLV (Units)	ALLOYS AND	VETALLIC COA	TINGS	•,	TLY (Unite)		
PIGMENTS NOT			HASE METAL	Not		;			
Applicable				plicable					
VEHICLE			MITALLIC COATINGS		_				
SOLVENTS		;	FILTER METAL PLUS COATING ON C	OSt FLUX					
ADDITIVES			C11+0.H5						
OTHERS									
HAZARDOUS MIXTURE	s or o	THER LIG	UIDS, SC _1DS, OR GAS	SES	~~	*	TLV (Units)		
Not /	\npl	icable							
	SF.R.E.								
		<del></del> ,		·····			,		
	· ·			·					
Salved salve de l		N III I	HYSICAL DATA			ή			
SOILING FOINT (*F.) Not Applicable			SPECIFIC GRAVITY IH			$\frac{1}{1}$	.790		
VAPOR PRESSURE INTO He. Not Applicabl	اجا	· 	PERCENT VOLATILE BY VOLUME 1'ST A EVAPORATION RATE	Not Applic	able	-			
VAPOR DENSITY (AIR=1) Not Applicab	ld		LAPORATION RATE	Not Appl:	lcable	-			
SOLUBILITY IN WATER at 26° C.	669	gm./10	D ml. Melting	Point		70	0-80°		
APPEARANCE AND ODOR White crystal	line	e powd	er, odorless,	cooling	saline	tas	te.		
Crorion III			VOI OCIONI IIA TA II			•	<del></del>		
SECTION IV	FIRE	ABO E	KPLOSION HAZAR	<del></del>	Let	7	Uni:		
Unknown			Solid						
SPECIAL FIRE FIGHTING PROCEDURES				·					
Nor	10				·	<u> </u>			
UNUSUAL FIRE AND EXPLOSION HAZARDS		<del></del>			<del></del>				
· · · · · · · · · · · · · · · · · · ·	<del></del>	<del></del>							
Nor					••••				
Pkg. Dim.	(OI	)):		Gross	иве.:				

·		S	ECTIO	V V HEA	LTH HAZARD D/	\TA
THE SHOLD LIMI	T VALUE NO	ot estab	lishe	d (gener	ally recogn	ized as safe for use in foo
CHICIS OF OVE	REXPOSURE	s with	other	mild or	ganic acids	, may be a mild skin irrita
CHIPHOTOCY AND	FIRST AID P	ROULDURES				
Flush sk	dir coni	act wit	h wat	er and f	lush eve co	ntact immediately with
			···•			
physiole	ogical s	saline o	r wat	er. Get	medical ca	re for eyes.
			SECTI	ON VI R	EACTIVITY DAT	A
STABILITY	UNSTA	REE			£ 10 Augus	ot Applicable
	STABL					or Appricable
NC OMPATABILIT		<u> </u>	X	L	3 1 2 1 . 1	
MAZARDONIS DEC			<del></del>		Applicable	
				Not	Established	
HAZARDOLIS POLVZERIZATION	. ]	MAY OCCUR			CONDITIONS TO A	Not Applicable
(( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( ( (		WILL NOT OC	CIIA	x	<u> </u>	
•						•
STEPS TO BE TAK					OR LEAK PROCE	EDURES
		1	e censeo	C/II 3FILLED	<u> </u>	
: •		A norma	l bru	sh down	and wash up	
					•	
WASTE DISPOSAL	METHOD	······································			<del></del>	
<del></del>		An:: no=		100001	nnaadura	
		Any nor	mai d	rabosar	procedure	
·····						
		SECTION	////	SDECIAL I	PROTECTION INF	CODMATION
RESPIRATORY PRI	OTECTION (S					···
		L EXHAUST			ly required	SPECIAL
VENTILATION	·	<del></del>		isfactor	<u>y</u>	
		ANICAL (Gene	re () .		•	OTHER
PROTECTIVE GLO	None	normal	ly re	quired •	EYE PROTECTION	safety glasses
OTHER PROTECT						
			SECTIO	N IX SPE	CIAL PRECAUTI	ONS
PRECAUTIONS TO	O BE TAKEN I	N HANDLING	AND STOP	Nor		
<del></del>	•	<del></del>		NOU		
OTHER PRECAUT	ION\$	<del></del>			<del></del>	
·			<del></del>	Non	ıe	
·.		_				

&U.S. GOVERNMENT PRINTING OFFICE: 1969-393-081/837

#### **SECTION I - IDENTIFICATION**

CHEMICAL NAME & SYNONYMS						
Precipitation Hardening Stainless Steel						
CHEMICAL FAMILY	FORMULA	TRADE NAME				
Metal	Mixture	Alloy PH 15-7				
DESCRIPTION		CAS NO.				
Silver metallic solid		Not assigned/Mixture				

#### **SECTION II - NORMAL HANDLING PROCEDURES**

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Precautions needed for abrasive, melting or other operations generating a dust or fume. Do not get dust or fume in eyes, on skin or on clothing. Do not take internally. Wash thoroughly with soap and water before eating or smoking. Avoid breathing dust or fumes.

PROTECTIVE	EEQUIPMENT	VENTILATION REQUIREMENTS		
Eyes Gloves Other	Goggles Impervious NIOSH/MSHA approved high efficiency particulate respirator if excessive dusting/fumes occurs	As required to keep airborne concentrations of chromium and nickel below TLV.		

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Iron	Fume	No data	No data	Accumulation of dust in
Chromium	10 mg/m <sup>3</sup> 1.0 mg/m <sup>3</sup>	No data	No data	lung (siderosis) Dermatitis, suspect
Nickel	1.0 mg/m <sup>3</sup>	No data	No data	carcinogen Dermatitis, suspect carcinogen
Manganese	5 mg/m <sup>3</sup> (ceiling)	No data	TC <sub>LO3</sub> 2.	Insomnia, CNS effects,

## (human) SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH PO	INT Not applicable	OSHA CLASSIFICATION Non-combustible solid	FLAMMABLE EXPLOSIVE LIMITS	LOWER N/A	UPPER N/A					
EXTINGUIS	EXTINGUISHING MEDIA Use extinguishing media suitable for surrounding materials.									
SPECIAL F	re Hazard & Fire Fight self-contained bre	TING PROCEDURES  Athing apparatus when any material is i			ssure					

#### **SECTION V - HEALTH HAZARD DATA**

THRESHOL	D LIMIT VALUE
	None established for alloy (chromium 0.5 mg/m <sup>3</sup> , nickel 1 mg/m <sup>3</sup> ACGIH 1984).
SYMPTOMS	OF OVER EXPOSURE Dust or fume: Skin, eye and mucous membrane irritation, sneezing, congestion, metallic taste, ingestion may cause vomiting, lethargy, restlessness.
<del></del>	Dust or fume: Wash with EMERGENCY FIRST-AID PROCEDURES
SKIN	soap and water before eating or smoking. If an irritation develops, call a physician.
EYES	Dust or fume: Flush thoroughly with water for 15 minutes. Call a physician.
INGESTIO	Dust: Not a likely route of exposure. If ingested, call a physician.
INHALATIC	Dust or Fume: Remove victim to fresh air. Call a physician.
	TD317 0404

#### **SECTION VI - TOXICOLOGY (Product)**

ACUTE ORAL LD 50	No data for alloy	CARCINOGENICITY MUTAGENICITY	Nickel and chromium are suspect carcinogens (NTP) No data for alloy
ACUTE DERMAL LD 50	No data for alloy	EYE IRRITATION	Dust may be an irritant
		PRIMARY SKIN IRRIT	ATION
ACUTE INHALATION LC 50	No data for alloy		Not known to be an irritant
PRINCIPAL ROUTES OF ABSO	RPTION		
Inhalation, dermal			
EFFECTS OF ACUTE EXPOSU	RE		
Dust may cause m	echanical irritation of	the eye. May cause	e respiratory irritation.
EFFECTS OF CHRONIC EXPO	SURE Although chrone that melting steel a	nium and nickel ar Lloys is associated	re suspect carcinogens, there is no with cancer.

#### SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)

#### ACTION FOR MATERIAL RELEASE OR SPILL

Dust or Fume: Wear NIOSH/MSHA approved high efficiency particulate respirator. Follow OSHA regulations for respirator use (See 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an appropriate container. Wash all contaminated clothing before reuse.

In the event of a large spill, use the emergency telephone number shown on the front of this sheet.

#### TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

#### WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

D.O.T. CLA	.53	. 1	Not regula	ated			
			SECTIO	ON IX - REA	CTIVITY DATA		
STABLE	X UNSTABLE	AT	°c	° <sub>F</sub>	HAZARDOUS	MAY OCCUR	
				POLYMERIZATION	WILL NOT OCCUR	X	
CONDITION	S TO AVOID	Presenc	e of carb	on monoxid	le during melting.		

\_\_\_\_\_

INCOMPATIBILITY (Material to Avoid) Strong acids, strong exidizers

HAZARDOUS DECOMPOSITION PRODUCTS Nickel carbonyl, chromium oxides, manganese oxides

#### **SECTION X - PHYSICAL DATA**

MELTING POINT	No data	VAPOR PRESSURE	No data	VOLATILES	N.A.
BOILING POINT	No data	SOLUBILITY IN WATER	Insoluble	EVAPORATION RATE	N.A.
SPECIFIC GRAVITY	(H <sub>2</sub> O = 1) #	PH N.A.		VAPOR DENSITY (Air = 1)	N.A.
* .282 lbs/	eu. inch				

INFORMATION FURNISHED BY:

Environmental Hygiene

and Toxicology (203) 789-5436

DATE

January 29, 1986

Department of Environmental Hygiene and Toxicology (203) 789-5436

Olin corporation

120 Long Ridge Road, Stamford, Connecticut 06904

OCEAN<sup>SM</sup> Network

EMERGENCY PHONE 1-800-OLIN-911

**EMERGENCY PHONE 1-800-OLIN-911** 

#### **SECTION I - IDENTIFICATION**

CHEMICAL NAME & SYNONYMS		
Precipitation Hardening	Stainless Steel	
	FORMULA	TRADE NAME
Metal	Mixture	Allov PH 17-7
DESCRIPTION		CAS NO.
Silver metallic solid		Not assigned/Mixture

#### SECTION II - NORMAL HANDLING PROCEDURES

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE
Precautions needed for abrasive, melting or other operations generating a dust or fume.
Do not get dust or fume in eyes, on skin or on clothing. Do not take internally. Wash thoroughly with soap and water before eating or smoking. Avoid breathing dust or fumes.

PROTECTIVI	EEQUIPMENT	VENTILATION REQUIREMENTS
Eyes	Goggles	As required to keep airborne
Gloves	Impervious	concentrations of chromium and nickel
Other	NIOSH/MSHA approved high efficiency particulate respirator if excessive dusting/fumes occurs	below TLV.

#### **SECTION III - HAZARDOUS INGREDIENTS**

BASIC MATERIAL	OSHA PEL	LD 50	LC 50	SIGNIFICANT EFFECTS
Iron	Fume 3	No data	No data	Accumulation of dust in lung (siderosis)
Chromium	10 mg/m <sup>3</sup> 1.0 mg/m <sup>3</sup>	No data	No data	Dermatitis, suspect
Nickel	1.0 mg/m <sup>3</sup>	No data	No data	carcinogen Dermatitis, suspect
Aluminum	15 mg/m <sup>3</sup>	No data	No data	carcinogen Overexposure may cause lung fibrosis

#### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT		OSHA CLASSIFICATION	FLAMMABLE	LOWER	UPPER
METHOD	Not applicable	Non-combustible solid	EXPLOSIVE LIMITS	N/A	N/A
EXTINGUIS	HING MEDIA				
	Use extinguishing n	nedia suitable for surrounding materials.			
SPECIAL F	IRE HAZARD & FIRE FIGHTI	ING PROCEDURES USE NIOSH/MSHA	approved po	sitive pre	ssure
	self-contained brea	thing apparatus when any material is inv	olved in a fir	re.	

#### **SECTION V - HEALTH HAZARD DATA**

SYMPTOM	None established for alloy (chromium 0.5 mg/m <sup>3</sup> , nickel 1 mg/m <sup>3</sup> Acs of over exposure Dust or fume: Skin, eye and mucous membrane i congestion, metallic taste, ingestion may cause vomiting, lethargy, in	irritation, sneezing,
SKIN	Dust or fume: Wash with EMERGENCY FIRST-AID PROCEDURES soap and water before eating or smoking. If an irritation develops, c	all a physician.
EYES	Dust or fume: Flush thoroughly with water for 15 minutes. Call a p	ohysician.
EYES	Dust or fume: Flush thoroughly with water for 15 minutes. Call a part of Dust: Not a likely route of exposure. If ingested, call a physician.	physician.

#### SECTION VI - TOXICOLOGY (Product)

ACUTE ORAL LD 50 ACUTE DERMAL LD 50	No data for alloy	CARCINOGENICITY MUTAGENICITY EYE IRRITATION PRIMARY SKIN IRRITA	Nickel and chromium are suspect carcinogens (NTP) No data for alloy Dust may be an irritant
ACUTE INHALATION LC 50	No data for alloy		Not known to be an irritant
PRINCIPAL ROUTES OF ABSO	PRTION	•	
Inhalation, dermal			
EFFECTS OF ACUTE EXPOSU			
Dust may cause m	echanical irritation of	the eye. May cause	respiratory irritation.
EFFECTS OF CHRONIC EXPO		nium and nickel ar	e suspect carcinogens, there is no

#### SECTION VII - SPILL AND LEAKAGE PROCEDURES (Control Procedures)

#### ACTION FOR MATERIAL RELEASE OR SPILL

Dust or Fume: Wear NIOSH/MSHA approved high efficiency particulate respirator. Follow OSHA regulations for respirator use (See 29 CFR 1910.134). Wear goggles, coveralls, impervious gloves and boots. Shovel or sweep up and place in an appropriate container. Wash all contaminated clothing before reuse.

In the event of a large spill, use the emergency telephone number shown on the front of this sheet.

#### TRANSPORTATION EMERGENCY, CONTACT CHEMTREC 800-424-9300

#### WASTE DISPOSAL METHOD

Dispose of contaminated product, empty containers and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

#### **SECTION VIII - SHIPPING DATA**

D.O.T. CLASS Not re			ot regula	ted			
		·		SECTIO	ON IX - REA	CTIVITY DATA	
STABLE	X	UNSTABLE	AT	°c	o <sub>F</sub>	HAZARDOUS	MAY OCCUR
						POLYMERIZATION	WILL NOT OCCUR X
CONDITIO	NS TO	AVOID				e during melting.	
INCOMPA	TIBILIT	Y (Material to	Avoid) Si	trong acid	ds, strong o	xidizers	··· -
			PRODUCTS	_ NT:	-11	yl, chromium oxides,	

#### **SECTION X - PHYSICAL DATA**

MELTING POINT No data	VAPOR PRESSURE No data	VOLATILES	N.A.
BOILING POINT No data	SOLUBILITY IN WATER Insoluble	EVAPORATION RATE	N.A.
SPECIFIC GRAVITY (H,O - 1) *	pH N.A.	VAPOR DENSITY (Air = 1)	N.A.
* .282 lbs/cu. inch			

INFORMATION FURNISHED BY:

Environmental Hygiene and Toxicology

(203) 789-5436

DATE January 29, 1986

Department of Environmental Hygiene and Toxicology (203) 789-5436

III CORPORATION

120 Long Ridge Road, Stamford, Connecticut 06904 OCEAN<sup>SM</sup> Network **EMERGENCY PHONE 1-800-OLIN-911** 

1508

121 121

MATERIAL	SAFETY DATA SH	EET :	PREMALUBE -	1	PAGE : 01
(071689-0265	-U0096373-4461	) DAT	E OF ISSUE 11/11/87	SUPERSI 08/20	EDES
	SECTIO		ERAL INFORMAT		
CHEMICAL NAME			TRADE I	NAME & SYNONYM	
N/A CHEMICAL FAMI			PREMALUBE-	MULA	
LUBRICANT				X <mixture< td=""><td></td></mixture<>	
	NAME: S, DIV. OF NCH		A ZIP CODE)		
BOX 152170 IRVING, TEXAS	ER, STREET, CIT 75015				
PREPARED BY: MIKE DICKSON/	T.S. CHEMIST	PRODUCT 4461	CODE NUMBER	EMERGENCY TEL: 214-438-1381	EPHONE NUMBER
THE MATABOS B			- HAZARDOUS II		
COMPONENTS AS	RESENTED BELOW THE PRODUCT MI	XTURE HAS	NOT BEEN TES	TED	
CHEMICAL NAME	(INGREDIENTS)	! HA7	ARD ! TIV	PEL*	! CAS#
MOLYBDENUM DI			IRR. N/A		1 7439-98-7
	££	CTION III	- PHYSICAL D	A 7 A	
	3E		- PHISICAL D		
	AHRENHEIT) N/A			20=1) :N/A	
VAPOR PRESSUR			DR BLACK		
PH ● 100%	N/A		ARITY DPAQUE		
			OPEMAL HISE-	1	
(CONTINUED)	SE	CTION III	PREMALUZE-		- PAGE : O2
PERCENT VOL	ATILE !80%	EV	- PHYSICAL DA	ATA E ¦N/A	- PAGE : 02
	ATILE 80%	EV	- PHYSICAL D	ATA E ¦N/A	- PAGE : 02
PERCENT, VOL BY VOLUME (%	ATILE   80%	EV	- PHYSICAL DAPPORATION RATION RATION AC = 1 )	ATA E ¦N/A	PAGE : 02
PERCENT, VOL BY VOLUME (% SOLUBILITY I	ATILE 80%	NSOLUBLE 25 SUS •	- PHYSICAL D. APORATION RATI (BU AC = 1 )	ATA E N/A	
PERCENT, VOL BY VOLUME (% SOLUBILITY I	ATILE 80%	NSOLUBLE 25 SUS •	- PHYSICAL D. APORATION RATI (BU AC = 1 )	ATA E ¦N/A	
PERCENT VOL BY VOLUME (% SOLUBILITY I VISCOSITY	ATILE 80% N WATER 1 1 9 S METHOD USED)	NSOLUBLE 25 SUS • ECTION IV	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.	ATA  E N/A  XPLOSION HAZAR	
PERCENT VOL BY VOLUME (% SOLUBILITY I VISCOSITY FLASH POINT (425 C.O.C	ATILE   80%) N WATER   1 9 S METHOD USED)	NSOLUBLE 25 SUS • ECTION IV	- PHYSICAL D. APDRATION RATI(BU AC = 1)  100 F - FIRE AND E. MMABLE LIMITS	ATA  E N/A  XPLOSION HAZAR	D L N/A UEL
PERCENT VOL BY VOLUME (% SOLUBILITY I VISCOSITY FLASH POINT (425 C.O.C EXTINGUISHING X <foam< td=""><td>ATILE 80% N WATER 1 1 9 S METHOD USED)</td><td>NSOLUBLE 25 SUS • ECTION IV</td><td>- PHYSICAL D. APDRATION RATI(BU AC = 1)  100 F - FIRE AND E. MMABLE LIMITS</td><td>ATA  E N/A  XPLOSION HAZAR</td><td>D L N/A UEL</td></foam<>	ATILE 80% N WATER 1 1 9 S METHOD USED)	NSOLUBLE 25 SUS • ECTION IV	- PHYSICAL D. APDRATION RATI(BU AC = 1)  100 F - FIRE AND E. MMABLE LIMITS	ATA  E N/A  XPLOSION HAZAR	D L N/A UEL
PERCENT VDL BY VOLUME (% SOLUBILITY I VISCOSITY FLASH POINT (425 C.O.C EXTINGUISHING X <foam SPECIAL FIRE</foam 	ATILE 80% N WATER 1 1 9 S METHOD USED) MEDIA *ALCOHO <foam< td=""><td>NSOLUBLE 25 SUS   ECTION IV  FLA  L" X&lt;</td><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  DRY 2 X<chem< td=""><td>ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A</td><td>D L   N/A TER RAY &lt; OTHER</td></chem<></td></foam<>	NSOLUBLE 25 SUS   ECTION IV  FLA  L" X<	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  DRY 2 X <chem< td=""><td>ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A</td><td>D L   N/A TER RAY &lt; OTHER</td></chem<>	ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A	D L   N/A TER RAY < OTHER
PERCENT VOLUME (% SOLUBILITY I VISCOSITY  FLASH POINT (425 C.O.C EXTINGUISHING X <foam based="" cases="" fire="" in="" product<="" special="" td="" wher=""><td>ATILE 80% N WATER 1 1 9 S METHOD USED) MEDIA *ALCOHO FIGHTING PROCED</td><td>NSOLUBLE 25 SUS •  ECTION IV  FLA  L"  X&lt;</td><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  DRY 2 X<chem< td=""><td>ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A</td><td>D L   N/A TER RAY &lt; OTHER</td></chem<></td></foam>	ATILE 80% N WATER 1 1 9 S METHOD USED) MEDIA *ALCOHO FIGHTING PROCED	NSOLUBLE 25 SUS •  ECTION IV  FLA  L"  X<	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  DRY 2 X <chem< td=""><td>ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A</td><td>D L   N/A TER RAY &lt; OTHER</td></chem<>	ATA  E N/A  XPLOSION HAZAR    N/A  LE   N/A	D L   N/A TER RAY < OTHER
PERCENT VOLUME (% SOLUBILITY I VISCOSITY VISCO	ATILE 80%  N WATER 1 1 9  S  METHOD USED)  MEDIA "ALCOHO <foam appr<="" e="" fighting="" high="" proced="" td="" temperat="" the="" wear=""><td>NSOLUBLE 25 SUS   ECTION IV  FLA  L" X&lt;</td><td>- PHYSICAL D. APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  2 X<chem aming="" approved<="" idsh="" occur.="" td=""><td>XPLOSION HAZAR    N/A     N/A     N/A     CAL   <sp all="" as="" pe="" respirator="" td="" with=""  =""  <=""><td>D L   N/A TER RAY <other< td=""></other<></td></sp></td></chem></td></foam>	NSOLUBLE 25 SUS   ECTION IV  FLA  L" X<	- PHYSICAL D. APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E.  MMABLE LIMITS  2 X <chem aming="" approved<="" idsh="" occur.="" td=""><td>XPLOSION HAZAR    N/A     N/A     N/A     CAL   <sp all="" as="" pe="" respirator="" td="" with=""  =""  <=""><td>D L   N/A TER RAY <other< td=""></other<></td></sp></td></chem>	XPLOSION HAZAR    N/A     N/A     N/A     CAL   <sp all="" as="" pe="" respirator="" td="" with=""  =""  <=""><td>D L   N/A TER RAY <other< td=""></other<></td></sp>	D L   N/A TER RAY <other< td=""></other<>
PERCENT VOLUME (%) SOLUBILITY I VISCOSITY  FLASH POINT (C.O.O.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C	ATILE 80%  N WATER 1 1 9  S  METHOD USED)  MEDIA "ALCOHO (-FOAM)  FIGHTING PROCED  HIGH TEMPERAT WEAR THE APPR  & EXPLOSION HAZ	NSOLUBLE 25 SUS   ECTION IV  FLA  L  X <cc ards="" are="" ely="" he="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" venti<=""><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 105h="" ail="" aming="" approved="" avier="" lated.<="" occur,="" td="" than=""><td>XPLOSION HAZAR  XPLOSION HAZAR    N/A LE    N/</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem></td></cc>	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 105h="" ail="" aming="" approved="" avier="" lated.<="" occur,="" td="" than=""><td>XPLOSION HAZAR  XPLOSION HAZAR    N/A LE    N/</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem>	XPLOSION HAZAR  XPLOSION HAZAR    N/A LE    N/	D  L   N/A  TER  RAY <other td="" troleum<=""></other>
PERCENT VOLUME (%) SOLUBILITY I VISCOSITY  FLASH POINT (C.O.O.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C	METHOD USED)  METHOD USED)  MEDIA -ALCOMO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR  EXPLOSION HAZ PETROLEUM VAPO AREAS INADEOUAT  ATING (O=INSIGN <flammab< td=""><td>NSOLUBLE 25 SUS   ECTION IV  FLA  L X<cc 1<="" ards="" are="" ely="" he="" ificant:="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" venti=""><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 105h="" ail="" aming="" approved="" avier="" lated.<="" occur,="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem></td></cc></td></flammab<>	NSOLUBLE 25 SUS   ECTION IV  FLA  L X <cc 1<="" ards="" are="" ely="" he="" ificant:="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" venti=""><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 105h="" ail="" aming="" approved="" avier="" lated.<="" occur,="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem></td></cc>	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 105h="" ail="" aming="" approved="" avier="" lated.<="" occur,="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem>	XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L	D  L   N/A  TER  RAY <other td="" troleum<=""></other>
PERCENT VOLUME (%) SOLUBILITY I VISCOSITY  FLASH POINT (C.O.O.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C.C	ATILE 80% N WATER 1 9 S METHOD USED) MEDIA -ALCOHO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR & EXPLOSION HAZ PETROLEUM VAPO AREAS INADEQUAT ATING (O=INSIGN <flammab< td=""><td>NSOLUBLE 25 SUS   ECTION IV  FLA  L X<cc 1<="" ards="" are="" ely="" he="" ificant:="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" venti=""><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" 2="MOD" <reactivit="" ail="" aming="" approved="" avier="" hazard<="" health="" lated.="" occur.="" slight:="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem></td></cc></td></flammab<>	NSOLUBLE 25 SUS   ECTION IV  FLA  L X <cc 1<="" ards="" are="" ely="" he="" ificant:="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" venti=""><td>- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" 2="MOD" <reactivit="" ail="" aming="" approved="" avier="" hazard<="" health="" lated.="" occur.="" slight:="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem></td></cc>	- PHYSICAL D.  APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 10sh="" 2="MOD" <reactivit="" ail="" aming="" approved="" avier="" hazard<="" health="" lated.="" occur.="" slight:="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other td="" troleum<=""></other></td></chem>	XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L	D  L   N/A  TER  RAY <other td="" troleum<=""></other>
PERCENT VOL BY VOLUME (%) SOLUBILITY I VISCOSITY  FLASH POINT (425 C.O.C EXTINGUISHING XCFOAM SPECIAL FIRE IN CASES WHER BASED PRODUCT UNUSUAL FIRE BE AWARE THAT LOW AREAS OR NFPA HAZARD R <health< td=""><td>ATILE 80%  N WATER 1 9  S  METHOD USED)  MEDIA -ALCOHO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR  EXPLOSION HAZ AREAS INADEOUAT  ATING (O=INSIGN  <flammab :="" ingredients.<="" it="" sec="" td="" value=""><td>ECTION IV  STATE OF THE STATE O</td><td>- PHYSICAL D. APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" <="" ail="" aming="" approved="" avier="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other ect="" extreme):<="" in="" td="" troleum=""></other></td></chem></td></flammab></td></health<>	ATILE 80%  N WATER 1 9  S  METHOD USED)  MEDIA -ALCOHO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR  EXPLOSION HAZ AREAS INADEOUAT  ATING (O=INSIGN <flammab :="" ingredients.<="" it="" sec="" td="" value=""><td>ECTION IV  STATE OF THE STATE O</td><td>- PHYSICAL D. APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" <="" ail="" aming="" approved="" avier="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other ect="" extreme):<="" in="" td="" troleum=""></other></td></chem></td></flammab>	ECTION IV  STATE OF THE STATE O	- PHYSICAL D. APORATION RATI (BU AC = 1 )  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 10sh="" <="" ail="" aming="" approved="" avier="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L</td><td>D  L   N/A  TER  RAY <other ect="" extreme):<="" in="" td="" troleum=""></other></td></chem>	XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A LE   N/A L	D  L   N/A  TER  RAY <other ect="" extreme):<="" in="" td="" troleum=""></other>
PERCENT VOL BY VOLUME (%) SOLUBILITY I VISCOSITY  VISCO	ATILE 80% N WATER 1 1 9  S METHOD USED) MEDIA - ALCOHO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR A EXPLOSION HAZ PETROLEUM VAPO AREAS INADEOUAT ATING (O=INSIGN <flammab erexposure="" eyes="" ingredients.="" it="" may<="" sec="" t="" td="" value:="" with=""><td>NSOLUBLE 25 SUS   ECTION IV  FLA  L X<cc 1="" ards="" are="" he="" ificant:="" ition="" ly="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" v<="" venti=""><td>- PHYSICAL D. APORATION RATION (BU AC = 1)  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" 4vier="" <="" aii="" aming="" approved="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A</td><td>D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other></td></chem></td></cc></td></flammab>	NSOLUBLE 25 SUS   ECTION IV  FLA  L X <cc 1="" ards="" are="" he="" ificant:="" ition="" ly="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" v<="" venti=""><td>- PHYSICAL D. APORATION RATION (BU AC = 1)  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" 4vier="" <="" aii="" aming="" approved="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A</td><td>D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other></td></chem></td></cc>	- PHYSICAL D. APORATION RATION (BU AC = 1)  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 10sh="" 4vier="" <="" aii="" aming="" approved="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A</td><td>D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other></td></chem>	XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A	D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other>
PERCENT VOL BY VOLUME (%) SOLUBILITY I VISCOSITY  VISCO	ATILE 80%  N WATER 1 9  S  METHOD USED)  MEDIA -ALCOHO FIGHTING PROCED E HIGH TEMPERAT WEAR THE APPR  EXPLOSION HAZ AREAS INADEOUAT  ATING (0=INSIGN	NSOLUBLE 25 SUS   ECTION IV  FLA  L X <cc 1="" ards="" are="" he="" ificant:="" ition="" ly="" n="" of="" opriate="" rl="" rs="" td="" ure="" ures="" v<="" venti=""><td>- PHYSICAL D. APORATION RATION (BU AC = 1)  100 F  - FIRE AND E  MMABLE LIMITS  2 X<chem 10sh="" 4vier="" <="" aii="" aming="" approved="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A</td><td>D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other></td></chem></td></cc>	- PHYSICAL D. APORATION RATION (BU AC = 1)  100 F  - FIRE AND E  MMABLE LIMITS  2 X <chem 10sh="" 4vier="" <="" aii="" aming="" approved="" lated.="" occur.="" td="" than=""><td>XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A</td><td>D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other></td></chem>	XPLOSIDN HAZAR  XPLOSIDN HAZAR    N/A     N/A	D  L   N/A  TER  TRAY <other al="" e)="" ect="" extreme):="" in="" ontact<="" td="" troleum=""></other>

(CONTINUED)	SECTION V - H	EALTH HAZARD DATA	PAGE : 03
EMERGENCY & FIRST AID PR	OCEDURES		
REMOVE PERSON TO FRESH A			
EYE CONTACT: FLUSH WITH FRESH WATER F			
SKIN CONTACT: WASH WITH SDAP AND WATER ATTENTION.			
INGESTION : IF SWALLOWED, DO NOT INC CITRUS JUICE IF AVAILABL GIVE ANYTHING BY MOUTH T		GIVE LARGE QUANTITIE AL ATTENTION IMMEDIAT JS PERSON.	S OF WATER OR ELY. NEVER
NOTES TO PHYSICIA	N :		
	SECTION VI	- TOXICITY INFORMATIO	N.
PRODUCT CONTAINS CHEMICA	L LISTED AS CAL	CINDGEN OR POTENTIAL	CARCINOGEN BY:
IARC <yes <<="" ntp="" td=""><td>YES DSHA &lt;</td><td>YES ACGIH <yes< td=""><td>OTHER <yes< td=""></yes<></td></yes<></td></yes>	YES DSHA <	YES ACGIH <yes< td=""><td>OTHER <yes< td=""></yes<></td></yes<>	OTHER <yes< td=""></yes<>
MOLYBDENUM DISFULFIDE NO TOXICITY DATA AVAIL			
	SECTION VII	- REACTIVITY DATA	
X <stabl< td=""><td>E <unstabi< td=""><td>CONDIDTIONS TO AV</td><td>OID</td></unstabi<></td></stabl<>	E <unstabi< td=""><td>CONDIDTIONS TO AV</td><td>OID</td></unstabi<>	CONDIDTIONS TO AV	OID
STABILITY   N/A			
INCOMPATIBILITY (MATERIA	LS TO AVOID)		
STRONG OXIDIZERS. HAZARDOUS DECOMPOSITION	PRODUCTS		
CARBON MONOXIDE.			
HAZARDOUS X <dcc< td=""><td>UR <dccu< td=""><td>CONDITIONS TO AV</td><td>OID</td></dccu<></td></dcc<>	UR <dccu< td=""><td>CONDITIONS TO AV</td><td>OID</td></dccu<>	CONDITIONS TO AV	OID
POLYMERIZATION		• • • • • • • • • • • • • • • • • • • •	
		PREMALUBE - :	
	SECTION VII	PREMALUBE -: I - SPILL OR LEAK PRO	CEDURES PAGE : 04
STEPS TAKEN IN CASE MATE		I - SPILL OR LEAK PRO	
STEPS TAKEN IN CASE MATE ELIMINATE ALL COURCES OF ABSORBANT AND PLOCE IN L BESTLES AND PICK UP WITH		I - SPILL OR LEAK PRO	
STEPS TAKEN IN CASE MATE ELIMINATE ALL COURCES OF ABSORBANT AND PLACE IN L SPILLS AND PICK UP WILL AND PLACE IN LABELED CON WASTE DISPOSAL METHOD	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS.	I - SPILL OR LEAK PRO D OR SPILLED TION. TAKE UP SMALL ERS FOR DISPOSAL. CC PICK UP REMAINDER	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK ITAINERS WITH FEDERAL,	I - SPILL OR LEAK PRO D OR SPILLED TION. TAKE UP SMALL ERS FOR DISPOSAL. CC PICK UP REMAINDER	SPILLS WITH INTAIN LARGE WITH ABSORBANT
	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK ITAINERS WITH FEDERAL,	I - SPILL OR LEAK PRO ED OR SPILLED TION. TAKE UP SMALL TRS FOR DISPOSAL. CO PICK UP REMAINDER STATE, AND LOCAL POL	SPILLS WITH INTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS. NEUTRALIZING AGENT	RIAL IS RELEASI SPRAKS DR IGN ABELED CONTAINI A VACUUM TRUCK ITAINERS.	I - SPILL OR LEAK PRO DOR SPILLED TION. TAKE UP SMALL RS FOR DISPOSAL. CO PICK UP REMAINDER STATE, AND LOCAL POL	SPILLS WITH NTAIN LARGE WITH ABSORBANT LUTION
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS: NEUTRALIZING AGENT	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN AVACUUM TRUCK TAINERS. WITH FEDERAL.	I - SPILL OR LEAK PRO ED OR SPILLED TION. TAKE UP SMALL TRS FOR DISPOSAL. CO PICK UP REMAINDER STATE, AND LOCAL POL	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS: NEUTRALIZING AGENT	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS. WITH FEDERAL.	I - SPILL OR LEAK PRO  ED OR SPILLED  TION. TAKE UP SMALL  ERS FOR DISPOSAL. CC  PICK UP REMAINDER  STATE, AND LOCAL POL  - SPECIAL PROTECTION	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS. NEUTRALIZING AGENT N/A REQUIRED VENTILATION GENERAL EXHAUST IS ADEOL	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS. WITH FEDERAL. SECTION IX	I - SPILL OR LEAK PRO ED OR SPILLED TION. TAKE UP SMALL ERS FOR DISPOSAL. CO PICK UP REMAINDER  STATE, AND LOCAL POL - SPECIAL PROTECTION	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS.  NEUTRALIZING AGENT N/A  REQUIRED VENTILATION GENERAL EXHAUST IS ADEOL RESPIRATORY PROTECTION TYPICAL USE DOES NOT RESPIRATION WHERE EXPOSURE FIRE USE NIOSH APPROVED	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS. WITH FEDERAL. SECTION IX	I - SPILL OR LEAK PRO ED OR SPILLED TION. TAKE UP SMALL ERS FOR DISPOSAL. CO PICK UP REMAINDER  STATE, AND LOCAL POL - SPECIAL PROTECTION	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS. NEUTRALIZING AGENT N/A REQUIRED VENTILATION GENERAL EXHAUST IS ADEOL	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS. WITH FEDERAL. SECTION IX	I - SPILL OR LEAK PRO ED OR SPILLED TION. TAKE UP SMALL ERS FOR DISPOSAL. CO PICK UP REMAINDER  STATE, AND LOCAL POL - SPECIAL PROTECTION	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS.  NEUTRALIZING AGENT N/A  REQUIRED VENTILATION GENERAL EXHAUST IS ADEOL RESPIRATORY PROTECTION TYPICAL USE DOES NOT RECEIVED WHERE EXPOSURE FIRE USE NIOSH APPROVED PROTECTION EDUCATION WHERE EXPOSURE FIRE USE NIOSH APPROVED PROTECTION GLOVES  EVE PROTECTION CHEMICAL GOOGLES DEPENDI	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAINA VACUUM TRUCK TAINERS WITH FEDERAL SECTION IX SECTION IX JATE	I - SPILL OR LEAK PRO  DOR SPILLED  TION. TAKE UP SMALL  ERS FOR DISPOSAL CO  PICK UP REMAINDER  STATE, AND LOCAL POL  - SPECIAL PROTECTION  RS. HOWEVER, IN EMER  ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSE OF IN ACCORDANCE REGULATIONS: NEUTRALIZING AGENT N/A  REDUIRED VENTILATION GENERAL EXHAUST IS ADEQUED TO TECTION TO THE SITUATION WHERE EXPOSURE FIRE USE NIOSH APPROVED PROTECTIVE GLOVES PVC GLOVES  EVE PROTECTION	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAINA VACUUM TRUCK TAINERS WITH FEDERAL SECTION IX SECTION IX JATE	I - SPILL OR LEAK PRO  DOR SPILLED  TION. TAKE UP SMALL  ERS FOR DISPOSAL CO  PICK UP REMAINDER  STATE, AND LOCAL POL  - SPECIAL PROTECTION  RS. HOWEVER, IN EMER  ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSAL DISPOSAL METHOD	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAINA VACUUM TRUCK TAINERS WITH FEDERAL SECTION IX SECTION IX JATE	I - SPILL OR LEAK PRO  DOR SPILLED  TION. TAKE UP SMALL  ERS FOR DISPOSAL CO  PICK UP REMAINDER  STATE, AND LOCAL POL  - SPECIAL PROTECTION  RS. HOWEVER, IN EMER  ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT
WASTE DISPOSAL METHOD DISPOSAL DISPOSAL METHOD	RIAL IS RELEAS SPRAKS DR IGN ABELED CONTAIN AVACUUM TRUCK TAINERS WITH FEDERAL SECTION IX SECTION IX UIRE RESPIRATOR SUCH AS WITH RESPIRATOR	I - SPILL OR LEAK PRO  DOR SPILLED  TION. TAKE UP SMALL  ERS FOR DISPOSAL CO  PICK UP REMAINDER  STATE, AND LOCAL POL  - SPECIAL PROTECTION  RS. HOWEVER, IN EMER  ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION  GENCY
WASTE DISPOSAL METHOD DESPOSATIONS NEUTRALIZING AGENT N/A  REQUIRED VENTILATION GENERAL EXHAUST IS ADEQUENT RESPIRATORY PROTECTION TYPICAL USE DOES NOT REC SITUATION WHERE EXPOSURE FIRE USE DOES PROTECTIVE GLOVES PVC GLOVES EYE PROTECTION CHEMICAL GOGGLES DEPENDI EXPOSURE OTHER PROTECTION SHOES OR BOOTS.	RIAL IS RELEASIS PRAKS DR IGN ABELED CONTAIN: A VACUUM TRUCK TAINERS.  WITH FEDERAL.  SECTION IX  ATE.  UIRE RESPIRATOR RESPIRATOR.  NG ON SEVERITY  SECTION X	DOR SPILLED DOR SPILLED TION. TAKE UP SMALL RS FOR DISPOSAL. CO PICK UP REMAINDER  STATE, AND LOCAL POL  STATE, AND LOCAL POL  SPECIAL PROTECTION  RS. HOWEVER, IN EMER ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION  GENCY  INFORMATION  INFORMATION
WASTE DISPOSAL METHOD DISPOSAL METHOD DISPOSAL METHOD DISPOSAL METHOD DISPOSAL METHOD DISPOSAL METHOD METHOD DISPOSAL METHOD DISPOSAL METHOD M	RIAL IS RELEASIS PRAKS DR IGN ABELED CONTAINA VACUUM TRUCK TAINERS.  WITH FEDERAL.  SECTION IX  SECTION IX  ATE.  UIRE RESPIRATOR.  NG ON SEVERITY  SECTION X  SECTION X  INDOOR	TO PILL OR LEAK PRODUCTION TAKE UP SMALL RS FOR DISPOSAL CO PICK UP REMAINDER  STATE, AND LOCAL POL  STATE, AND LOCAL POL  SPECIAL PROTECTION  RS. HOWEVER IN EMER ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION  GENCY  INFORMATION  INFORMATION
WASTE DISPOSAL METHOD DESPOSATIONS NEUTRALIZING AGENT N/A  REQUIRED VENTILATION GENERAL EXHAUST IS ADEQUENT RESPIRATORY PROTECTION TYPICAL USE DOES NOT REC SITUATION WHERE EXPOSURE FIRE USE DOES PROTECTIVE GLOVES PVC GLOVES EYE PROTECTION CHEMICAL GOGGLES DEPENDI EXPOSURE OTHER PROTECTION SHOES OR BOOTS.	RIAL IS RELEASIS PRAKS DR IGN ABELED CONTAIN A VACUUM TRUCK TAINERS.  WITH FEDERAL.  SECTION IX  ATE.  UIRE RESPIRATOR  RESPIRATOR.  NG DN SEVERITY  SECTION X	TO PILL OR LEAK PRODUCTION TAKE UP SMALL RS FOR DISPOSAL CO PICK UP REMAINDER  STATE, AND LOCAL POL  STATE, AND LOCAL POL  SPECIAL PROTECTION  RS. HOWEVER IN EMER ACRID SMOKE EXISTS F	SPILLS WITH NTAIN LARGE WITH ABSORBANT  LUTION  INFORMATION  GENCY ROM  INFORMATION  INFORMATION

TRW-01957

PREMALUBE-1

SECTION XI - TRANSPORTATION \* (FOR FUTURE USE) PAGE : 05

APPLICABLE REGULATIONS <--49 CFR <--IMCD SHIPPING NAME HAZARD CLASS ID NUMBER | REPORT QTY LIMITED OTY LABELS UNIT CONTAINER DOT SPS CONTAINER NET EXPLOSIVE WT. AEROSOL PROPELLANT(S) N/A N/A N/A 80% N/A N/A N/A INSOLUBLE DIL
BLACK 425 C.D.C.
TIBE OF RLAMING OCCUR. SECTION XII - REFERENCES X XX IN CASES WHERE HIGH TEMPERATURE OF RLAMING OCCUR, AS BASED PRODUCT, WEAR THE APPROPRIATE NIOSH APPROVED R WITH ALL PETROLEUM ESPIRATOR. BE AWARE THAT PETROLEUM VAPORS ARE HEAVIER THAN AIR LOW AREAS OR AREAS INADEQUATELY VENTILATED. AND MAY COLLECT IN

CARBON MONOXIDE.

PREMALUBE - 1

(CONTINUED)

OXIDIZERS.

SECTION XII - REFERENCES

PAGE : 06

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION, HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THIS DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CERTIFIED LABS, DIV. OF NCH CORP.

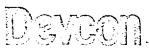
ASSUMES NO RESPONSIBILITY FOR PERSONAL INJURY OR PROPERTY DAMAGE CAUSED BY THE USE, STDRAGE OR DISPOSAL OF THE PRODUCT IN A MANNER NOT RECOMMENDED ON THE PRODUCT LABEL USERS ASSUME ALL RISKS ASSOCIATED WITH SUCH UNRECOMMENDED USE, STORAGE, OR DISPOSAL OF THE PRODUCT.

# MATERIAL SAFETY DATA SHEET

		SECT	ION 1		
MANUFACTURER'S NAME		<del></del>	EMERGENCY TELEPHONE (\$05) -471-9132	NO.	
American Pumice Company ADDRESS (Number, Street, City, State, and ZIP Co	ide)	07			
Galisteo Road , Santa Fe , New CHEMICAL NAME AND SYNONYMS	nexi	CO 6/	TRADE NAME AND SYNONYMS		
PUMICE CHEMICAL FAMILY			FORMULA		······
Nineral Oxide			Primary Silicon Oxide	<del></del>	•
SECTIO	11 140	- HAZAF	DOUS INGREDIENTS		
PAINTS, PRESERVATIVES & SOLVENTS	*	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units
Pigments N/A		<u> </u>	Base Metal N/A		
Catalyst N/A			Alloys N/A		
Vehicle N/A			Metallic Coatings N/A		
Solvents N/A			Filler Metal Plus Coating or Core Flux N	Α	
Additives N/A			Others		
Others					
HAZARDO	ous »	HXTURES	OF OTHER SOLVENTS	%	TLV (Units)
					(5,,,,,,,
		<u>, F</u>			
S	ECTI	DN 111 - 1	<b>PHYSICAL DATA</b> 54 to 23 lib. per	•	
	ECTI	ON 111 -	PHYSICAL DATA 54 to 23 lib. per Specific Gravity ( $H_2O = 1$ )		N/A
Boiling Point (°F) Vapor Pressure (mm Hg.)		N/A	r		N/A N/A
Boiling Point (°F)			Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Volume (%)		
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)			Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Volume (%)		
Boiling Point (°F) Vapor Pressure (mm Hg.)		N/A	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Valume (%)  Evaporation Rate ( = 1)		
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Volume (%)  Evaporation Rate ( = 1)  ranules		
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Valume (%)  Evaporation Rate ( = 1)		
Bailing Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Volume (%)  Evaporation Rate ( = 1)  ranules  EXPLOSION HAZARD DATA		N/A
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p  SECTION IV	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Valume (%)  Evaporation Rate ( = 1)  ranules  EXPLOSION HAZARD DATA  Not Flammable		N/A
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Valume (%)  Evaporation Rate ( = 1)  ranules  EXPLOSION HAZARD DATA  Not Flammable		N/A
Boiling Point (°F)  Vapor Pressure (mm Hg.)  Vapor Density (Air = 1)  Solubility in Water Not Soluble  Appearance and Odor Light gray p  SECTION IV  Flash Point (Method used)  Extinguishing Media	powde	N/A er or g	Specific Gravity (H <sub>2</sub> O = 1)  Percent Volatile by Valume (%)  Evaporation Rate ( = 1)  ranules  EXPLOSION HAZARD DATA  Not Flammable		N/A

		SECTION	V - HEAL	TH HAZARD DA	ATA	
Threshold Limit	Value		N/A			
Effects of Overexposure						
Emergency and	First Aid Proce	edures	····			<del></del> .
			<del> </del>	· · · · · · · · · · · · · · · · · · ·		
	<del></del>	SECTI	ON VI - R	EACTIVITY DA	TA	
Stability	Un stable		Condition	s to Avoid	· ,	
	Stable					
Incompatability	(Materials to a	void)	•		· · · ·	
Hazardous Deco			None	<del></del>		
Hazardous	May O			Conditions to	Avoid	
Polymerization	Will No	ot Occur	X	<u></u>		
	<del></del>	SECTION VI	I - SPILL	OR LEAK PRO	CEDURES	
Steps to be Tak	en in Case Mat	erial is Relea	sed or Spil	lled Sweep a	and dispose as a land	
		material.				
				<u> </u>		
Waste Disposal	Method No		methods	are needed.	Material is considered	
Waste Disposal			me t hods	are needed.	Material is considered	
Waste Disposal		specific	methods	are needed.	Material is considered	
Waste Disposal	sa	specific (		are needed.  PROTECTION IN		
	s a '	specific (fe.	PECIAL F			
Waste Disposal Respiratory Pro	s a '	specific ife.  TION VIII - S	PECIAL F			
Respiratory Pro	SEC	specific of the specific of th	PECIAL F		IFORMATION	
Respiratory Pro	SEC tection (Specify Local Exhau Mechanical (	specific of the specific of th	PECIAL F		Special	
Respiratory Pro Ventilation N/A	SEC  tection (Specify Local Exhau Mechanical (	specific of the specific of th	PECIAL F	PROTECTION IN	Special Other	
Respiratory Pro Ventilation N/A Protective Glove	SEC  tection (Specify Local Exhau Mechanical (	specific of the specific of th	SPECIAL F	PROTECTION IN	Special Other None	
Respiratory Pro Ventilation N/A Protective Glove	SEC  tection (Specify Local Exhau Mechanical (  None Equipment	specific of the specific of th	SPECIAL F	PROTECTION IN  Eye Protection  CIAL PRECAUT	Special Other None	
Respiratory Pro Ventilation N/A Protective Glove Other Protective	SEC  tection (Specify Local Exhau Mechanical (  None Equipment	specific of the specific of th	SPECIAL F	PROTECTION IN  Eye Protection  CIAL PRECAUT	Special Other None	

# Material Safety Data Sheet



DEVICON CORPORATION/30 ENDICOTT STREET/DANVERS, MASSACHUSETTS 01923/(617) 777-1100

The information and recommendations contained herein are based upon data believed to be correct. However, no quarantee or warranty of any kind expressed or implied is made to the information contained being of

	HEALTH	3
7	FLAMMABILITY	1
B	REACTIVITY	0

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

#### SECTION 1 - IDENTITY AND EMERGENCY INFORMATION

TRADE NAME

PUTTY HARDENER 0200

EMERGENCY

TELEPHONE NO. (817) 777-1100

CHEMICAL FAMILY

Polyamines and Modified Polyamines

OTHER INFORMATION CALLS: DEVCON SAFETY DEPT (617) 777-1100

OTHER PRODUCTINFORMATION The following health hazard data pertain to the hardener only. When fully cured, the mixed product is non-hazardous.

#### SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENTS	CAS NUMBER	يە	NATURE OF HAZARO
Triethylenetetramine (TETA)	112-24-3	30- 60	Severe skin and eye irritant respiratory irritant; skin
			sensitizer.
Polyamide Resin	12624-35-0	30- 60	Severe eye irritant
Modified Aminoethyl Piperazine	70776-30-6	10- 30	Skin and eye irritant
,			

#### SECTION 3 - PHYSICAL DATA

BOILING POINT (F)		VAPOR DENSITY (AIR = 1)		EVAPORATION RATE	
	>450		>1	(BuAc = 1)	<1
MELTING POINT (F)		SPECIFIC GRAVITY		SOLUBILITY IN WATER	
	n.a.		0.98_		Appreciable
VAPOR PRESSURE (mm	Hg)	PERCENT VOLATILE		pH (5 wt. % in H2O)	
@ 20°C	ko.o1	BY VOLUME (%)	n	]	10-11
APPEARANCE AND ODG					
	Straw cold	ored gel; mild ammoni	a like ∞	lor.'	•

#### SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

FLASH FOINT (F) (Method Used)		FLAMMABLE LIMITS IN AIR	LEL	טפּר	
>200°F (TCC)			n.a.	n.a.	
EXTINGUISHING MEDIA	CO2, dry chemical or v	water spray.			
SPECIAL FIRE FIGHTING: Firefighters sh clothing.		d breathing apparatus and pr	cotective		

UNUSUAL FIRE AND EXPLOSION HAZARDS

Mone

#### SECTION 5 · HEALTH HAZARD DATA

EMERGENCY AN	ND FIRST AID PROCEDURES
EYES.	Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative.
SKIN	Immediately remove any contaminated clothing and wash thoroughly with soap and warm water.
INGESTION:	Corrosive. Do not induce vamiting. Give large amounts of water or milk
INHALATION	and transport to a medical facility. Remove to fresh air. Contact a physician if symptoms persist.

#### \* \* SECTION 5 - HEALTH HAZARD DATA (Continued)

THRESHOLD LIMIT VALUE	084L LD <sub>50</sub> (8)	AT); DERMAL	LD <sub>50</sub> (FAEBIT);	INHALATION LO <sub>SO</sub> (RAT)
Not established	TETA 2500	g/kg TETA	820mg/kg	N/A
ROUTE OF EXPOSURE			EFFECTS OF OVE	REXPOSURE
ACUTE:				
EYES: Severe i	rritation or b	ourns.		
skin: Severe i	rritation or b	urns, possible	allergic re	sponse.
INHALATION: Respirat	cory irritation	n, possible all	ergic respon	se.
сняомис: Possible	e sensitization	n from repeated	l skin centac	t.
CARCINOGENICITY:	NO NID	ACGIH? 12 No	AC MONGGRAFHS7	OSHA REGULATED?
MEDICAL CONDITIONS GENERALLY AGGRAVATED	BY EXPOSURE AST	uma, bronchitis	5	

#### SECTION 6 - REACTIVITY DATA

STABILITY	UNSTABLE	BLE CONDITIONS TO AVOID				
	STABLE	ΧE	Exposure to open flame or excessive heat.			
INCOMPATIBILIT	/ (Materials to	a Avoidi St	rona	oxidizing agents, acids and chlorinated organic compounds		
HAZARDOUS DEC	COMPOSITIO			Oxides of nitrogen, carbon and ammonia.		
HAZARDOUS POLYMERIZATIO	MAY OCCUR			conditions to Avoid Heat is generated when mixed with epoxy resin. Use		
	WILL NO	T OCCUF	<sup>3</sup> X	caution when mixing large quantities.		

#### SECTION 7 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED Prevent skin and eye contact. Remove contaminated clothing. Discard contaminated leather articles such as shoes and belts. Absorb spillage on inert material and discard in suitable containers.

WASTE DISPOSAL METHOD

Remove to a waste disposal facility operating in compliance with state and local regulations.

### SECTION 8 - SPECIAL PROTECTION INFORMATION

EYES.	Safety glasses with side shields or splash proof goggles
SKIN:	Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.
INHALATION:	None needed in normal use with proper ventilation. In poorly ventilated are use NIOSH approved organic vapor masks.
VENTILATION:	Local exhaust is recommended for prolonged or repeated use. Effective mechanical ventilation is adequate for occasional use.

#### SECTION 9 - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING, STORING, ETC.

Prolonged or repeated overexposure may cause sensitization and allergic response. Persons so effected should consult a physician. If sensitization is confirmed, avoid further exposure to material.

Keep hands away from eyes when handling material or before washing after use.

Wash	thoroughly	after using,	particularly before	eating or	smoking.	
Store	in a cool	, dry place.	•	•	,	

D.O.T. PROPER SHIPPING NAME	Corrosive Liquid,	N.O.S.	,REV	JISED
D.O.T. HAZARO CLASS (IF APPLIC	Corregive Mater	ial UN # 1760	DATE: JUL	LY 1936